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Petroleum Industry Continues to Improve

Highest production in 1930, week ending Feb. 22, average daily output 2,699,098 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Holding Gasoline Stocks Down to Working Requirements a Necessary Factor. Expect Increase in Field Operations

By Andrew M. Rowley

Lowest daily average crude oil production in the United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

Continued improvement in conditions affecting the petroleum industry is expected by oil men in different areas throughout the country. Both economics reports presented to the American Petroleum Institute last week showed the business is in an especially good statistical position and outlined clearly the steps necessary to obtain the benefits from what already has been accomplished.

It is of the utmost importance that refiners hold gasoline stocks down to working requirements during this winter. Excessive runs to stills will depress the gasoline market with a resultant effect upon the crude oil price structure. Producers have their problems well in hand and the output of crude will be held to market demands or less. East Texas no longer is a menace as Governor Sterling has demonstrated he will hold production there to a level of around 400,000 bbls. daily. Not enough is known about the new discovery in Upshur County, East Texas, to determine definitely its effect upon the general situation, but it is safe to say it will not be permitted to threaten the improvement under way.

Action is expected this week on the plan to substitute the acreage unit basis for production in East Texas for that of the well allowable. Solution of a problem relating to the gasoline situation in California is expected with higher crude oil prices there anticipated.

The industry in the Mid-Continent is adjusting itself to the higher crude oil and gasoline prices and there is a strong feeling another advance of 15 cents a barrel for crude oil is possible by the first of the year. Equipment and supply houses are preparing for increased field operations expected after the new year opens.

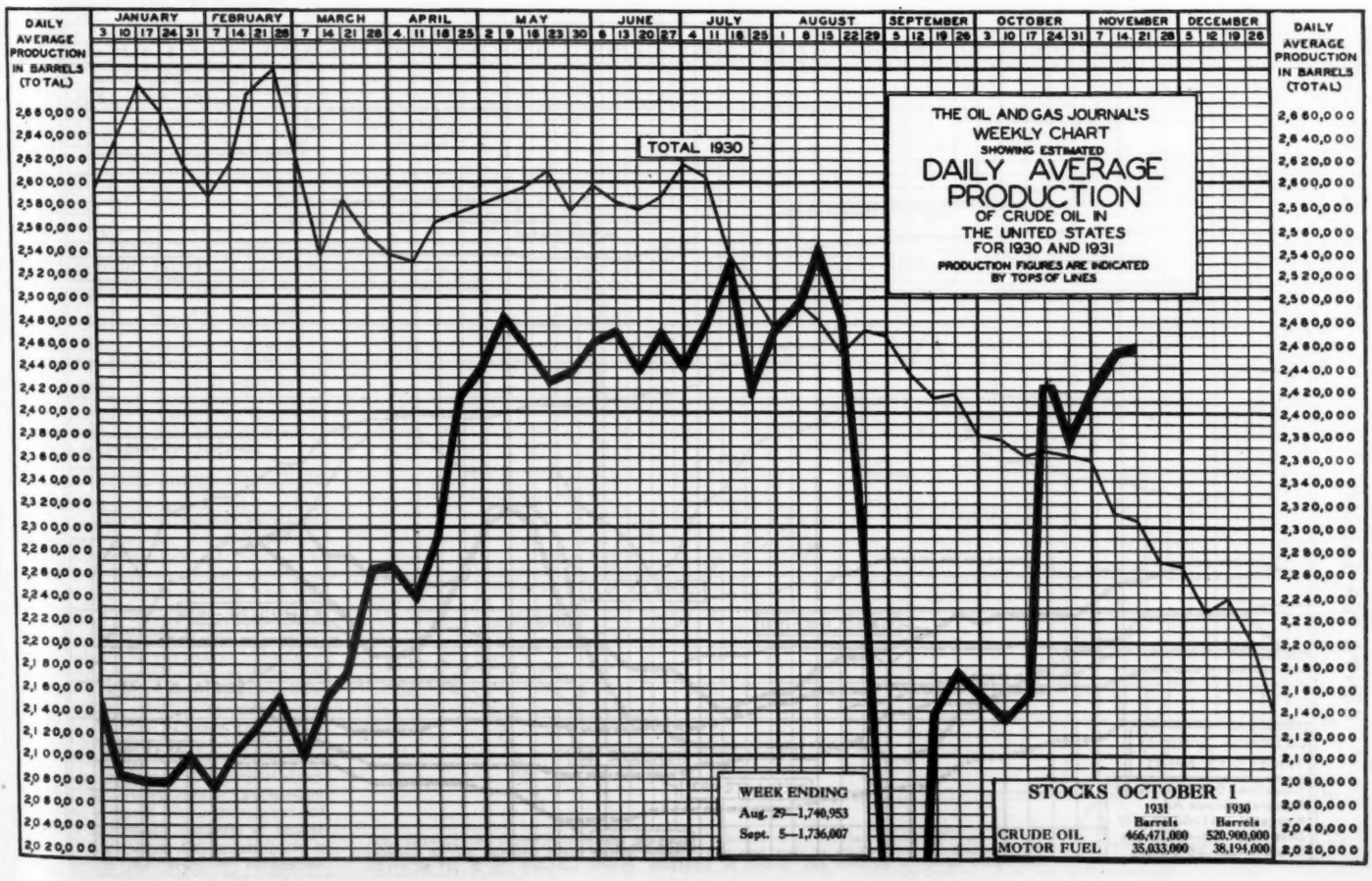
As each new estimate of crude oil reserves is made, oil companies are more than ever convinced the industry soon will have to inaugurate a conservative drilling campaign to insure its future requirements and protect its interests. With such a vast investment in the industry dependent entirely upon an adequate supply of the raw material, present reserves do not loom nearly as large as they did when East Texas was flooding the market with cheap crude.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended November 14 and a comparison with the previous week follows:

	Nov. 14	Nov. 7
Oklahoma—		
Oklahoma City	169,235	189,130
Seminole-St. Louis	139,610	117,665
Remainder of State	234,440	227,415
Total Oklahoma	543,285	534,210
East Texas—		
Kilgore	140,082	148,610
Lathrop	132,068	125,813
Joiner	139,115	144,955
Total East Texas	411,265	419,378
West Texas	202,178	195,257
North Central Texas	84,240	84,297
Texas Panhandle	60,488	67,481
East Central Texas	56,426	55,885
North Louisiana	29,615	29,055
Arkansas	37,045	37,745
Kansas	102,710	106,130
Total Mid-Continent area	1,527,952	1,529,438
Gulf Coast—Texas	119,985	120,846
Gulf Coast—Louisiana	32,320	32,455
Southwest Texas	61,755	61,890
Eastern	120,000	122,700
Rocky Mountain area	93,968	93,735
California—		
Santa Fe Springs	62,750	60,350
Long Beach	75,250	74,550
Playa Del Rey	21,750	22,250
Elwood	23,850	24,150
Kettleman Hills	62,300	58,600
Remainder of State	260,250	255,900
Total California	506,150	495,800
Total United States	2,462,130	2,456,864

→ Increase, 5,266 Bbls. Daily ←



Quiet Week in Oklahoma Refined Market

Gasoline Prices Slightly Lower. Wide Interest Manifested in Proposed Second Grade of Gasoline by Ethyl Corporation

By C. O. Willson

A quiet week in the Oklahoma (Group 3) market brought only minor changes in tank car quotations. Both refinery and natural gasolines were slightly lower in quotations reflecting a lessened demand. This weakness did not apply to sales of all refiners and gasoline manufacturers, but enough low priced material made its appearance the latter part of last week and the first two days of this week to be a market factor. Scattered sales of all grades of gasoline were being made on the open market from one-eighth to one-fourth cent under the prices prevailing a week ago, with additional reductions in prospect if buying does not improve within the next few days.

Burning oils, gas oils and all grades of furnace oils were firm in price, although the continued warm weather has slowed up the demand for all products used as fuels. The firm markets reflect the fact that supplies of the better grades of fuels are limited, with higher prices probable with the first cold period extending over several days. The decline in Pennsylvania grade lubricants and other paraffin base oils has brought a weaker tone to the Mid-Continent cylinder stocks and neutrals, but so far the larger manufacturers have not reduced their quotations.

"Q" Brand Gasoline

The most discussed development of the week was the announcement by the Ethyl Gasoline Corp. that plans had been completed for the introduction of a second grade gasoline to be treated with antiknock fluid similar to tetraethyl lead, which is used in bringing the present grade of Ethyl Gasoline to a uniform knock rating. The new gasoline, which will be known as "Q" brand, will be introduced on March 1, 1932, the date set for increasing the knock rating of Ethyl Gasoline from 74 to 78 octane numbers. The new gasoline will have an octane rating of 68 to 70, except west of the Rocky Mountain states, where the maximum will be 72. A discussion of the contract including the announcement of the Ethyl Gasoline Corp. appears on page 89 of this issue.

While the latest development in the trend toward higher antiknock gasolines has no immediate significance in gasoline markets of Oklahoma and other refining centers, it may become a dominating factor in the 1932 market and it is from that angle the proposal is being discussed.

Briefly, the latest Ethyl corporation plan provides for treating a regular grade of gasoline with an antiknock fluid in order to secure a motor fuel which will be uniform as to octane rating. Presumably, the fuel will be sold to the consumer 3 cents a gallon under the present premium grade of Ethyl Gasoline and in line with any other regular grades of gasoline.

Based on the proposed contract, the privilege of selling the "Q" brand will cost the refiner or jobber a minimum of .2585 cent per gallon and a maximum of .675 cent per gallon depending on the quantity of the fluid needed to bring the gasoline to the required octane rating. Using the minimum quantity of fluid permitted under the contract terms, the octane rating would be increased 3 points and with the maximum quantity, 15 points.

There are two main angles to this latest proposal—manufacturing and merchandizing. There are also many phases to these two main angles varying with the different refining and marketing organizations. From the manufacturing end, the question hinges on the relative costs of producing gasoline. The first question for each refiner to answer is: "Will it be cheaper to increase the antiknock rating of my finished gasoline by purchase of the Ethyl fluid or by enlarging the cracking and reforming equipment of my refinery?" There is no question that the trend toward higher antiknock gasolines has not ended and to keep pace with competition refiners must continue to improve the quality of their gasoline output. This situation is reflected in the improvement programs completed or under way at a number of large and small refineries and those assured at additional plants over the next few months.

All those interviewed since the announcement was made agreed that the average refiner from a strictly manufacturing angle could enlarge or improve

(Continued on Page 104)

REFINED MARKET BAROMETER

Refinery gasoline prices continued to advance at Atlantic Seaboard refineries and bulk terminals for domestic movement during the past week. Export prices also were fractionally higher. A slightly reactionary trend was apparent in the Mid-Continent and Middle West gasoline market following a steady advance of several weeks. Natural gasoline prices also declined in the Mid-Continent but were strong in California. Scattered advances were reported in kerosene prices and the Gulf Coast export quotations are higher. All fuels used as furnace oils were generally strong. Heavy fuels and Diesel oils, unchanged. Bright stocks and some grades of neutral oils continued to decline in Pennsylvania furnishing the only important change in the lubricating oil market. Wax prices were unchanged.

Mid-Continent—Scattered offerings of refinery gasoline at lower prices. Natural gasoline quotations lower. Kerosene firm. High gravity fuels, gas oils and furnace oils strong. Less demand for cylinder stocks.

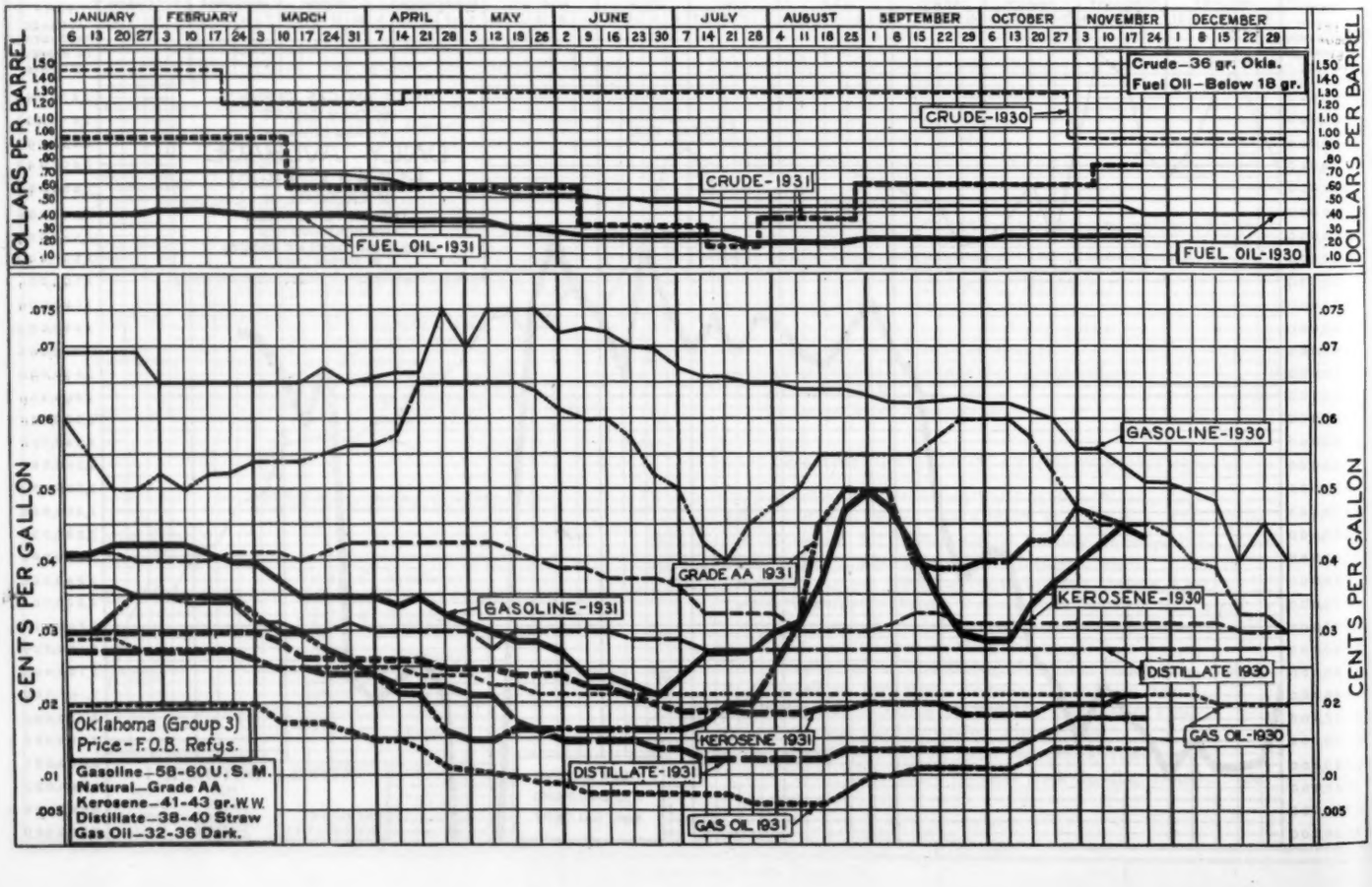
East Coast—Better feeling in gasoline market and prices continue to advance. Higher kerosene prices maintained. Export gasoline prices slightly higher. Lub market unsettled following price reductions of previous week. Improved demand for gas oil. Better contract movement of wax.

Chicago—Refinery gasolines reactionary. Furnace oils and kerosene firm.

Pennsylvania—Bright stocks and some grades of steam refined stocks and neutrals continue to decline. Gas oil prices reduced. Good movement of gasoline.

Gulf Coast—Gasolines, both for domestic and export movement slightly higher. Fuels firmer.

California—Kerosene prices higher. Natural gasolines strong. No change in other products.



Antitrust Law Suits Filed in Texas

Attorney General Names 15 Oil Companies in Ouster Proceedings. Code of Ethics Is Given as Basis for Proceedings

AUSTIN, Tex., Nov. 16.—The ousting of 15 major oil companies and two associations of oil companies from Texas for alleged violation of the State's antitrust laws, and fines to a maximum of $17,850,000 were sought in a suit filed by Atty. Gen. James V. Allred in the fifty-third district court of Travis County.

The suit seeks forfeiture of the charters of the domestic corporations, cancellation of the permits of foreign companies operating in Texas, liens on the property of all defendants and fines under the antitrust laws for violations from November 20, 1929, to the date of the suit, approximately 700 days.

The defendants named in the suit are: Standard Oil Co. of New York, Standard Oil Co. of New Jersey, Standard Oil Co. of California, Shell Union Oil Corp., Humble Oil & Refining Co., The Texas Company, Gulf Refining Co., Pasotex Petroleum Co., Continental Oil Co., Sinclair Refining Co., Magnolia Petroleum Co., Simms Oil Co., Shell Petroleum Corp., Cities Service Oil Co., Texas Pacific Coal & Oil Co., Texas Petroleum Marketers Association and the American Petroleum Institute.

Allegations in Suit

A conspiracy to control and dominate the business of marketing gasoline and petroleum products and to destroy independent filling station operators was charged in the suit. It also was charged that the defendant companies, under the guise of complying with a so-called code of practices and with the purported approval of the Federal Trade Commission, have been engaged since November 20, 1929, in a systematic program of acquiring all independent filling stations in Texas, fixing the price of equipment, lessening and eliminating competition between themselves and generally dominating the marketing branch of the oil industry.

The minimum fine for violation of antitrust laws is $50 a day and the maximum $1,500 a day. The attorney general charges that each defendant is liable individually for a minimum fine of $35,000 or a maximum fine of $1,050,000, or a total minimum for all defendants of $595,000 and a maximum of $17,850,000.

The suit, which results from an investigation for which the legislature appropriated $30,000, will be called in January, when a trial date probably will be set.

The petition alleges that in 1928 the defendant companies, with the Pan American Petroleum & Transport Co., the Richfield Oil Co. of California, the Atlantic Refining Co. of Pennsylvania, the Tide Water Associated Oil Co., the Standard Oil Co. of Indiana and various others, controlled 90 per cent of the oil

(Continued on Page 103)

BEAUMONT CHAMBER PROTESTS TO ALLRED

BEAUMONT, Tex., Nov. 14.—A protest against any action which "might retard development of the State and result in greater unemployment among Texas workmen," was telegraphed Atty. Gen. James V. Allred by the Beaumont Chamber of Commerce. The telegram follows:

"The executive committee of the Beaumont Chamber of Commerce desires to protest your action against the oil companies in Texas. We feel the oil companies are doing the very best they can under stress and unusual and trying circumstances.

"There is no doubt but what the oil industry in all its branches, from production and refining to distribution and ultimate sales, represents one of the most important factors of the welfare of Texas. The oil industry in all its phases has been facing an almost disastrous condition which is being met at a tremendous loss by all concerned. It appears to us that your present action is untimely and may result in a great loss industrially to the State of Texas, retard our development and add to our present unemployment.

"It is our hope that you may find it possible to come to an early and equitable understanding with the oil companies, which we believe are endeavoring to comply with the law. The above statements we are sure represent the sentiment of this community and other large sections of the State."

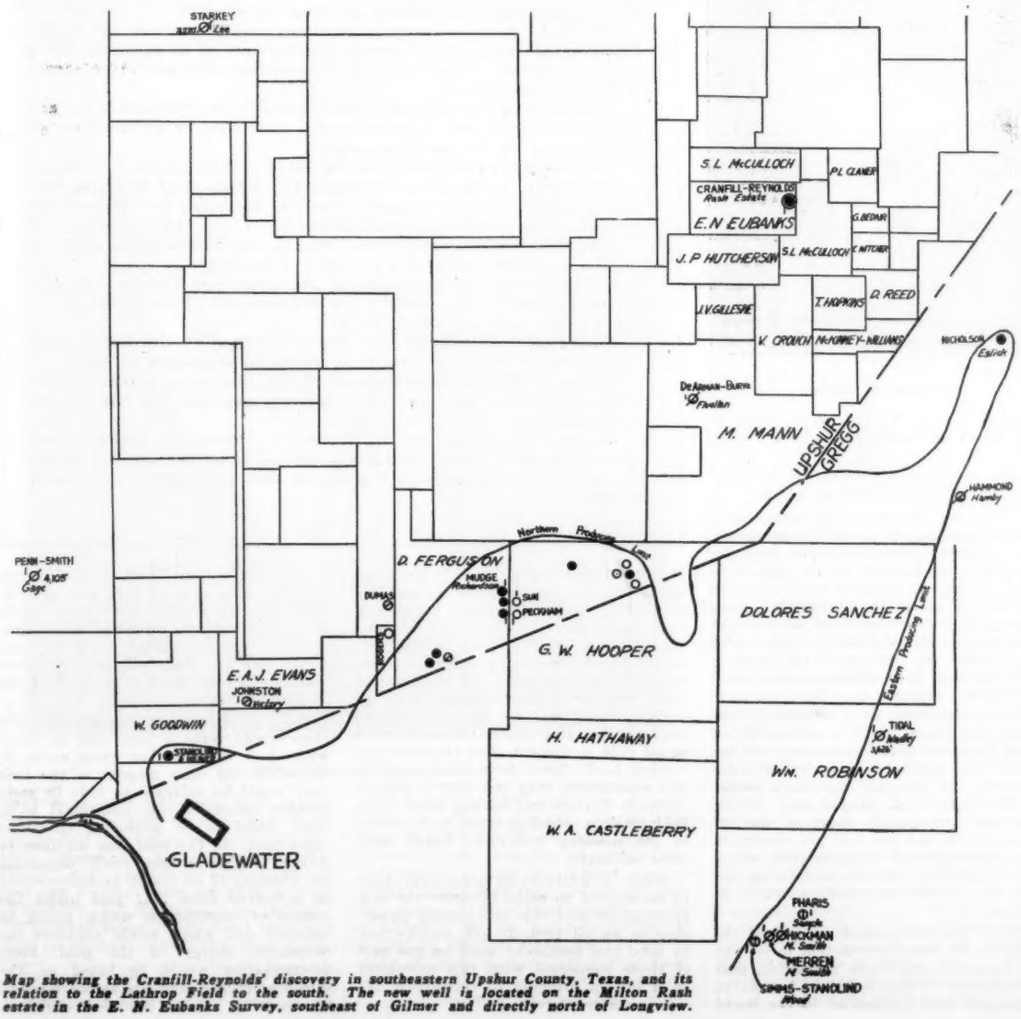
Upshur Test Is East Texas Surprise

DALLAS, Tex., Nov. 17.—A big surprise broke when Cranfill & Reynolds' No. 1 Rash in the Eubanks Survey, southeastern Upshur County, which had appearances of proving a dry hole, tested 27 fourbles of 35 gravity oil in 11 minutes at a total depth of 3,728 feet, or at a subsea datum of minus 3,399 feet. Top of the sand was reported logged at minus 3,377 feet, but determinations are now being made to check this report. The bottom of the hole setting at minus 3,399 feet throws it far below the water level of the field, and the fact that it tested oil, and of a lower gravity than that found in the field has brought up an enigma which geologists and engineers are now trying to solve. Gravity of the oil found in the main part of the field is 40°.

Some are of the opinion that the sand found in this test is another sand than the Woodbine. Others think that dipping of the field to the north is the cause of the difference in depth of the producing horizon, while still others profess that they do not know what to think of the showing made in the test.

Base of the Pecan Gap chalk was logged 3 feet higher in the Cranfill & Reynolds test than in the DeArmand dry hole which is approximately 2 miles due south, but base of the Austin chalk was logged 26 feet lower than in that test, this due partly to the thickening of the formation below the base of the Pecan Gap chalk. No water was found in the bottom of the hole in the Cranfill & Reynolds well.

Six and five-eighths inch casing was cemented in the hole on November 16, and it will be near the end of the week before plug can be drilled and a test made. Prospects of making a producer are now considered good, although the outcome is still in doubt. It may lead to the opening of another distinct pool from the present 40-mile long field which has given the oil industry such "growing pains" during the 13 months it has been producing. It is located over 3 miles northwest of the nearest production in the Lathrop area, northeastern Gregg County, and will be closely watched when plug is drilled to determine just what position the well will take in regard to extending the field, opening a new field, producing from a different horizon, or proving only a small pumping well when completed. Some are of the latter opinion.



Map showing the Cranfill-Reynolds' discovery in southeastern Upshur County, Texas, and its relation to the Lathrop Field to the south. The new well is located on the Milton Rash estate in the E. N. Eubanks Survey, southeast of Gilmer and directly north of Longview.

New Era Opened for Petroleum Industry

Making Principle of Equitable and Ratable Ownership Effective Means Hard Work With Big Benefits. Institute Proceedings

By Andrew M. Rowley

A new era for the petroleum industry was opened at the twelfth annual convention of the American Petroleum Institute at Chicago last week when the board of directors of the institute indorsed the principle of equitable and ratable ownership of the recoverable oil and gas in a common pool in the proportion which the recoverable reserves underlying each owner's land bear to the recoverable reserves in the pool. A committee to be appointed by the president of the institute will prepare a comprehensive program designed to put into practical operation the principle above set forth.

Wholehearted and active co-operation upon the part of the entire producing branch of the industry will be necessary to facilitate the work the institute has started. It probably will require a long time to procure the legislation necessary to make the plan effective but the benefits which will accrue to all branches of the business are so important an intensive drive will be started throughout the

Charles F. Roeser

country within the very near future in the effort to secure the needed legislation.

The resolution as adopted by the board of directors of the institute follows:

"Whereas, the prevailing practices in the development of oil and gas pools and the production therefrom based upon the capture by each owner in the pool of as much as he can, as fast as he can, regardless of injury to his neighbor, have been proven to be wasteful of these irreplaceable natural resources, inequitable as between the owners of the common reservoir and demoralizing to the whole petroleum industry,

"Now, therefore, be it resolved by the board of directors of the American Petroleum Institute, that it endorses, and believes the petroleum industry likewise endorses, the principle that each owner of the surface is entitled only to his equitable and ratable share of the recoverable oil and gas and gas energy in the common pool in the proportion which the recoverable reserves underlying his land bear to the recoverable reserves in the pool:

"Be it further resolved, in view of the necessity for immediate action to correct the deplorable conditions prevailing, that a committee of this board be appointed to prepare and recommend to the board within 60 days a comprehensive program designed to put into practical operation the principle herein enunciated."

Many factors are involved in this new conception of crude oil production. It will be a big job to accomplish the objective and one that will require earnest and aggressive work on the part of the committee placed in charge of the program as well as leaders of the oil industry in all oil-producing states.

But the task is no greater than was that of standardizing oil field equipment. The greatest accomplishment of the American Petroleum Institute as a whole, probably, up to this time has been the standardization of oil field equipment. Leaders in the present movement certainly can gain inspiration by looking back to the work of the standardization committees. More than 200 of the leading engineers, executives and equipment manufacturers associated with the oil business devoted years to bringing about standardization of oil field equipment. And all these men worked hard. Aside from other meetings and discussions, they met once a year at Colorado Springs and for one whole week held sessions which started at 8 o'clock in the morning and often lasted until after midnight.

While a different program will have to be evolved to make effective the new principle of equitable and ratable ownership in an oil pool, it will require just as hard and persistent work on the part of those connected with this movement as it did in bringing to completion the standardization work.

The first question usually asked in regard to the new conception of production is: "How will such a law operate? Suppose I drill a well and find oil. What happens then?"

Naturally until a definite program of procedure is outlined and plans and methods for making the principle effective are formulated, all answers to such questions are chiefly personal opinions. However, it is felt whatever legislation is procured will provide for a state commission to enforce the act. When a producing well is completed, the state commission could step in and issue instructions covering further development work. Such instructions probably would provide for drainage areas around the completed well and limit offsets to distances which would not allow drainage from the discovery well.

Owners of acreage around the well then would form a unit and as other wells were drilled other units would be formed in the same manner or the first unit would be enlarged to take in more surface owners if the additional wells were found to be producing from the same pool. As the pool was outlined or defined engineers then could determine the quantity of oil which probably would be recovered from that pool under the system of development which would be enforced and which would conserve the propulsive energy of the pool. Such determination would be based on the thickness of the sand, its saturation and its porosity. It is conceded engineers have evolved methods whereby such calculations can be made with great accuracy.

The Case of Edge Tracts

Parts of the common pool might not be as prolific of production as other parts. The owners of edge tracts could not reasonably expect as great a portion of the recoverable oil from the entire pool as owners of land above the main body of oil. Equitable apportionment of the recoverable oil could be made much along the same line as is followed now in the Yates Pool in Pecos County, Texas. Potentials of the wells are taken and considered in connection with the acreage of each tract as compared to the total acreage of the pool. Under the new conception the engineers probably would go further and consider the thickness of the sand underlying each tract of land and the porosity of that sand in connection with the potential of the wells and the acreage of the entire pool.

In other words, it is now possible for engineers to determine fairly accurately just how much oil underlies any certain tract in a common pool and the percentage of that oil which can be recovered under careful development. That is the quantity of oil the surface owner would own, regardless of whether wells were drilled on his tract of land or on adjoining tracts in the unit. Expenses of development would be apportioned according to the percentage of recoverable oil owned by each surface owner.

Daniel J. Moran

Stimulates Orderly Development

Development of oil fields under such a plan would insure each surface owner of his equitable share of all the oil recovered at a minimum of expense; would eliminate the waste of intensive, competitive drilling such as characterized East Texas, Seminole, Oklahoma City and other such pools; would stabilize production in that there would be no incentive on the part of any landowner to bring all his oil to the surface as quickly as he can; would do away with the necessity of offsets to protect tracts from drainage; and would stabilize the price structure at a figure which would insure a reasonable profit to each surface owner.

There would be no more wild orgies of drilling. Instead, there would be steady and constant development work carried on in all promising areas as operators everywhere would know the de-

HIGH SPOTS OF A.P.I. CONVENTION

Among the actions taken by the board of directors of the American Petroleum Institute at the twelfth annual convention of that organization at Chicago last week were the following:

Endorsed the principle of equitable and ratable ownership of recoverable oil and gas in a common pool and decided to formulate a program to put the plan into practical effect.

Decided to hold the convention next year at the Rice Hotel, Houston, Tex., November 15, 16 and 17.

Urged the necessity of an immediate decrease in the rate of gasoline taxation and a strict application of the proceeds of such decreased taxation to the construction of highways alone and decided to set up an organization to prosecute a campaign to prevent increases and procure decreases in gasoline taxes.

The institute will assist in organizing committees in each state for the purpose of combating gasoline tax evasion.

Elected Amos L. Beaty as president and authorized the executive committee to fix and arrange for payment of an adequate salary to the president of the institute. Heretofore that executive served without remuneration.

Endorsed in principle the imposition of a tariff on crude oil and refined products and voted to seek a mail vote of all members of the institute on the tariff proposal.

Increased the membership of the board of directors to 72 from 67.

Approved the report of the institute's Division of Refinery Statistics and Economics covering estimates on supply and demand for the nine months' period from October 1, 1931, to July 1, 1932.

The divisions of production, refining and marketing elected 20 members of their respective general committees.

Recommended participation of the petroleum industry in preparing an exhibit representing the development of the industry for the World's Fair at Chicago in 1933.

Endorsed the program for the observance of the 200th anniversary of the birth of George Washington, a project of 1932.

Adopted the recommendations of the institute's committee on uniform gasoline tax law for a uniform gasoline tax law in the United States.

Cabled the Association of Rumanian Petroleum Industrialists offering to call a world conference limited to an exchange of views on the world-wide economic situation and of supply and demand factors.

velopment around any rich discovery would be carried on in a conservative manner to yield the greatest quantity of oil and conserve the propulsive energy, which, in itself, would prevent flooding the market with cheap crude to the detriment of operators everywhere.

Aid to Small Operator

The new conception should be of especial benefit to the small operator and landowner. Discovery of oil near land he owns will not force him to dispose of his holdings at whatever price he can get, in order to protect the land from drainage, if he is financially unable to drill the tract himself. His ownership of surface acreage over the common pool insures him his equitable share of the recoverable oil and gas regardless of who does the drilling or where the wells are drilled. The cost of development would be prorated among landowners according to their proportion of acreage held and

W. T. Holliday

the quantity of oil engineers decided underlay their land and at least a portion of this cost could come from sales of oil from the discovery well. The fact each landowner was bound to receive his just proportion of the oil and gas from the common pool would be an asset which the banks, undoubtedly, would recognize in the matter of making loans on the land or holdings. Such loans would be well secured, protected by the law which assured returns from the common pool, and the danger of tumbling crude oil prices would be eliminated by reason of the fact the pool would be developed in an orderly and conservative manner.

The plan sounds like the millennium for the oil industry, but it is practical, feasible and can be made effective if oil men everywhere are informed of its provisions and support the project. There can be no objection to the plan on the part of government, for it prevents waste attendant to intensive drilling campaigns and it assures each surface owner he will get the recoverable oil underneath his land and that his neighbor cannot reduce that oil to possession and deprive the rightful owner of his share as is the case under the present system of drilling and the present interpretation of ownership of oil under the wild game theory handed down in 1875.

Institute Will Pay President

Of especial interest to the industry was the decision of the board of directors of the institute to pay a salary to its president. It has been realized for some time the position, if filled properly, required much hard work on the part of the incumbent. E. B. Reeser, president for the past three years, devoted a great part of his time and energy to the position and the many problems confronting the industry which were considered by the institute. In fact, his friends feel he endangered his health through overwork resulting from the addition of duties as president of the institute to his own as president of the Barnsdall Corp. The great success achieved by Mr. Reeser as head of the institute could not have resulted except through this hard work and his natural ability as a leader. The executive committee of the institute has not as yet determined upon the amount of salary to be paid Mr. Beaty.

In addition to electing Amos L. Beaty, director of the Phillips Petroleum Co. and former treasurer of the institute, as president, the board of directors elected the following:

Vice president at large, H. R. Gallagher, Shell Oil Co., San Francisco.

Vice president for production, Charles F. Roeser, Roeser & Pendleton, Fort Worth, Tex.

Vice president for refining, Daniel J. Moran, Continental Oil Co., Ponca City, Okla.

Vice president for marketing, W. T. Holliday, Standard Oil Co. of Ohio, Cleveland, Ohio.

Executive vice president, W. R. Boyd, Jr., American Petroleum Institute, New York.

Treasurer, Axtell J. Byles, Tide Water Associated Oil Co., New York.

Secretary and assistant treasurer, Lacey Walker, American Petroleum Institute, New York.

The board also voted to increase its membership from 67 to 72 and elected the following as directors, these being in addition to those previously elected by the institute membership at an open meeting: E. R. Brown, Magnolia Petroleum Co., Dallas, Tex.; J. Frank Drake, Gulf Oil Corp., Pittsburgh, Pa.; H. B. Earhart, White Star Refining Co., Detroit, Mich.; W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; W. M. Keck, Superior Oil Co., Los Angeles; W. M. Irish, Atlantic Refining Co., Philadelphia; C. F. Meyer, Standard Oil Co. of New York, New York; E. T. Moore, Simms Petroleum Co., Dallas, Tex.; Thomas A. O'Donnell, Los Angeles; J. C. Van Eck, Shell Union Oil Corp., New York; George P. Whaley, Vacuum Oil Corp., New York.

Foreign Oil Conference

The board accepted and approved the report of a committee appointed to draft a reply to the cable from the Association of Rumanian Petroleum Industrialists. It recommended that the following cable, over the signature of the president of the institute, should be sent:

"Petroman,

"Bucharest, Rumania.

"The American Petroleum Institute expresses its appreciation of your cable quoting a resolution passed by the Association of Rumanian Petroleum Industrialists and suggesting that this institute take in hand a convocation of a world petroleum conference on the subject of production, and that the Kessler plan be accepted as the basis of discussion.

"Owing to the laws of the United States the American petroleum industry cannot accept the Kessler plan as a basis of discussion nor any other plan involving a definitive agreement between producers to restrict production, but nevertheless believes that benefits might result from a world conference of producers which would be limited to an exchange of views of the world-wide economic situation and of the supply and demand factors in order to give the producers of every country the opportunity in conformity with their own laws individually to regulate their operations in the most intelligent manner.

"If you believe that a conference within this scope would be beneficial and if you desire the American Petroleum Institute to call such a conference we are willing to do so."

J. C. Van Eck, C. B. Ames, and C. F. Meyer, chairman, composed the committee.

World's Fair Oil Exhibit

The board adopted a resolution cordially recommending participation of the petroleum industry as a whole in preparing an exhibit representing the development of the industry for the World's Fair at Chicago in 1933.

It is proposed to illustrate through

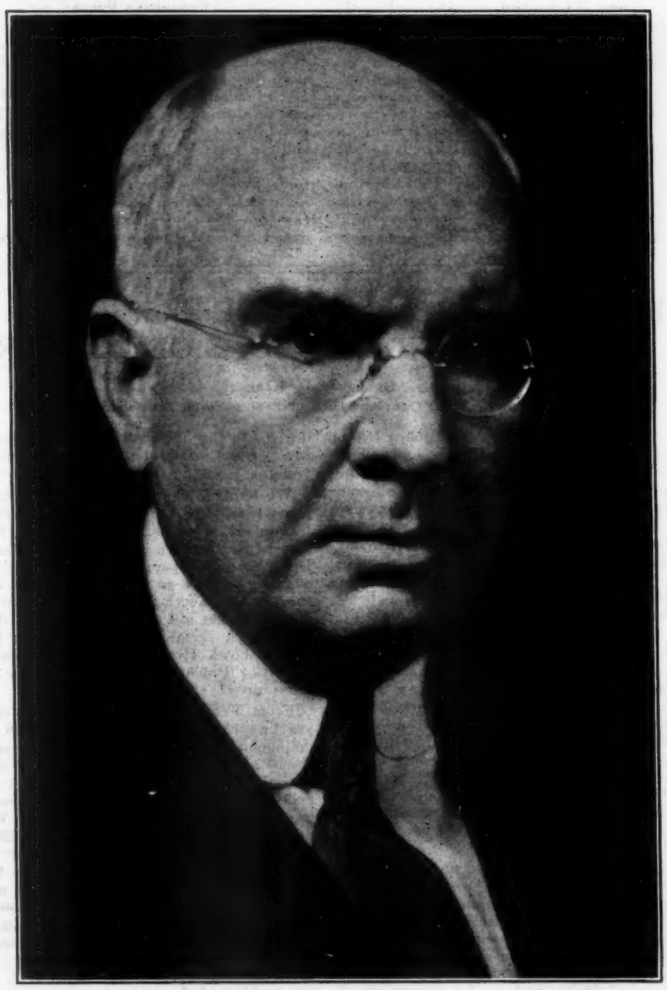
(Continued on Page 100)

"ACTION" IS BEATY'S SLOGAN AS HE TAKES INSTITUTE PRESIDENCY

By Amos L. Beaty
President of American Petroleum Institute*

I have a deep sense of responsibility in taking up this work as president of the American Petroleum Institute. This job, to be done right, is an enormous task, and I realize it. It don't know how well I shall be able to carry on. I feel that it would be a tragedy, almost, if the great work that has been done in the times of stress that we have had covering the last two years, the work that has been headed by my predecessor, Mr. Reeser, were allowed to slow down, or that the pressure were not kept as high as possible. My slogan shall be "Action."

and they can't be done by talking. They can't be done by sitting at a desk in New York, or Tulsa, or anywhere else. It involves action, work. I am not taking this job with any thought that there is anything in it than an enormous amount of work.



Judge Amos L. Beaty

There are a few things that I think are vital to be done to keep this work going, We have too much production of crude oil and gasoline. I think all of you know that. I think all of you will admit it. It isn't a great deal too much, but it is just enough to keep the industry in the slough that it has been in for the last two years. A little improvement in the situation, a 10 per cent change, would put us on our feet and enable us not to make up what we have lost during those periods or transpose those red figures

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*Statement made at A.P.I. convention in Chicago immediately after his election as president of the institute.

H. R. Gallagher

Reservoir Energy Is Crucial Point

Propulsive Force Distinguished From Gas Energy Mentioned in Institute Resolutions on Unitization

By Earl Oliver

COMPLETING NEW SERIES OF ARTICLES

Mr. Oliver is completing the new series of articles for publication in The Oil and Gas Journal analyzing the engineering and legal principles involved in the efficient production of crude oil. The first article of this series was published in the issue of October 29, and publication of the remaining articles will be started within the near future. These articles are of especial interest at this time because of action of the American Petroleum Institute in endorsing the principle of equitable and ratable ownership in a common pool, advocated by Mr. Oliver and W. P. Z. German in their articles recently published in The Oil and Gas Journal.

In reply to a request from The Oil and Gas Journal that we analyze the significance of the American Petroleum Institute action endorsing the "new conception of oil field development," we transmit the following.

The resolution adopted by the A.P.I. board of directors is:

Whereas, the prevailing practices in the development of oil and gas pools and the production therefrom based upon the capture by each owner in the pool of as much as he can, as fast as he can, regardless of injury to his neighbor, have been proven to be wasteful of these irreplaceable natural resources, inequitable as between the owners of the common reservoir and demoralizing to the whole petroleum industry,

Now, therefore, be it resolved, by the board of directors of the American Petroleum Institute, that it endorses, and believes the petroleum industry likewise endorses, the principle that each owner of the surface is entitled only to his equitable and ratable share of the recoverable oil and gas and gas energy in the common pool in the proportion which the recoverable reserves underlying his land bear to the recoverable reserves in the pool:

Be it further resolved, in view of the necessity for immediate action to correct the deplorable conditions prevailing, that a committee of this board be appointed to prepare and recommend to the board within 60 days a comprehensive program designed to put into practical operation the principle herein enunciated.

The background for this resolution is to be found in addresses delivered by J. Edgar Pew, John R. Suman and W. P. Z. German. Our analysis will be divided into two parts: First, the result to be expected from the general adoption of the principles described; second, the assistance that the American Petroleum Institute will render toward their adoption.

Reservoir Energy

An unfortunate error crept into the wording of the resolution which, if perpetuated, will unnecessarily complicate, if not defeat the effort. After calling attention to that error in the hope that it might be eliminated we shall base our discussion on the "new conception" in harmony with the ideas of those who conceived it rather than according to the wording of the resolution. In the addresses of Messrs. Suman and German it will be found that the term used to describe the propulsive force is "reservoir energy" rather than "gas energy" for the reason that it is the resultant of many variable factors only partially understood. Among its components are hydrostatic head, weight of overburden, and many other factors only vaguely sensed. While its influence in the reservoir is easily ascertained and controlled, its origin is not subject to determination in such manner as will permit its equitable division among individual landowners. Nature has distributed it over the entire reservoir. Only a part, and sometimes a minor part at that, is stored in the free gas area. In many cases it is a direct hydraulic force. Furthermore large quantities are stored in the gas dissolved in the oil. Assigning it, therefore, entirely to the owner of the lands containing free gas and allowing him to exact tribute for it not only is unfair but is unnecessary.

Mr. Suman, arguing for the new conception in his address at Chicago, stated:

"The determination of the extent of participation in the proceeds from the pool by owners of tracts underlaid by gas offers one of the most difficult problems in establishing principles governing equitable and efficient oil pool development."

Harry Pennington, arguing against the new conception in the Independent Petroleum Association of America Monthly for September-October, 1931, states:

"But the most serious phase of ownership in situ is that involving the energy of gas and the force of water."

These gentlemen are arguing from opposite sides of the question but both state the most serious obstacle to the new conception is the equitable distribution of the energy contained in the reservoir. Each of them is assuming that this energy must be divided in some manner between the landowners. That, however, does not necessarily follow.

Propulsive Force

Oil and gas contained in each owner's land are physical objects subject to ready determination and distribution. Furthermore they have an established legal status. Each landowner has long been entitled by law to appropriate portions of them. The courts have recognized a type of ownership in relation to them. On the other hand this newly recognized propulsive force known as reservoir energy has no such legal status. Neither the legislature nor the courts have yet defined its ownership and they are, therefore, still free to fix a type of ownership upon this reservoir energy that is most beneficial to society. It is not gas. Neither is it oil. But it is a force that acts on both of them and may be separated from them. If the owner of the gas and the owner of the oil are each permitted to appropriate their share of the oil and gas under conditions that do not injure others, they have no right to complain even though they are not allowed to exact tribute from others for use of their so-called shares of this reservoir energy. This reservoir energy is a force that works within the reservoir but should not be taken from it. It is a status to be maintained rather than a product to be divided.

It is vital to the effective working of this new conception of oil field development that an impractical legal status not be placed upon this newly recognized force. A similar legal mistake was made 50 years ago regarding oil and gas that has almost ruined the petroleum industry. This new conception is meant to correct that old mistake and it would be unfortunate if a like legal mistake were incorporated in this correction.

The new conception more accurately stated would divide the oil and gas according to the second paragraph of the resolution but the energy or propulsive force in the reservoir would not be so divided. As previously stated, it is a condition to be maintained rather than a product to be distributed. No landowner should be assigned a definite part of it but all landowners should be protected against any landowner wastefully dissipating it. Under this conception the oil and gas would necessarily be extracted from the reservoir at the point or points in the reservoir that would lend themselves to the most efficient utilization of the propulsive force and would thereupon be delivered to each landowner or his order in proportion to his extractable oil and gas content. If the gas were desired for return to the reservoir as a medium by which to carry additional energy into the reservoir, that gas should be purchased or acquired through some agreement, for the gas owner is, under the law, as much entitled to the immediate delivery of his gas as the oil owner is entitled to the delivery of his oil; but neither is entitled to any special consideration for being required to bring his product out of the reservoir at a point that will best conserve and utilize the propulsive force in the reservoir.

The New Conception

If this construction of rights be accepted we believe the new conception of oil field development will be comparatively easy of application, but if the reservoir energy is to be divided between the respective owners, the determination of relative rights will be most difficult.

Addressing ourselves, then, to the new conception in the form that was originally proposed, we believe its general adoption would be the most important single step that could be taken toward stabilizing the oil industry. It would not be a complete remedy but it would serve as a basis on which other corrective steps could be taken. It would take away the right of one landowner to appropriate another landowner's share of the oil and gas in a common pool. It would re-establish the law of supply and demand as an active working force in the oil and gas industry, which economic law has been largely neutralized and rendered ineffective by the more powerful law of self preservation—each owner having to extract at once his share of oil and gas regardless of demand in order

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PENNSYLVANIA GASOLINE TAX SAVING MILLIONS OF DOLLARS

By Clyde L. King

Secretary of Revenue, Commonwealth of Pennsylvania, Harrisburg, Pa.*

Gasoline bootleggers have robbed Pennsylvania of many millions of dollars in taxes. In the first few months of the present Pinchot administration, we found that one gasoline dealer out of four was either not reporting at all or reporting fraudulently. We found that at least one gallon of gasoline out of five, and probably one out of four, paid no tax to the state, and the tax went into the bootlegger's pocket.

In August of this year the bureau collected the tax on 105,258,553 gallons, as compared with 81,573,935 gallons in the same month of the previous year, an increase of 28 per cent. In September of this year the bureau collected on 112,270,218 gallons, as compared with 83,964,882 gallons in the same month of the year before, an increase of 33.7 per cent. This increase happened as our registrations of automobiles and trucks were declining, as compared with the year before, due to the depression.

Bootlegging of gasoline previous to the present administration was one of the major illicit industries of Pennsylvania. It now is in the midst of a serious depression. That depression is due to an honest administration of the law without fear of political reprisals and without political favor, and to the enactment of a gasoline tax law which the government of Pennsylvania and the great gasoline distributing companies in the state agree has been a benefit to both.

Liquid Fuels Tax Act

The present liquid fuels tax act was signed May 21, and became effective June 1 of this year. It removed collection of the gasoline tax from the retailer to the distributor. It reduced collection of the tax from approximately 28,000 retail dealers to the 580 distributors now holding permits to do business in Pennsylvania.

We found 7,200 dealers who were making no returns at all, or were making fraudulent returns. Prosecution followed investigation. As the whiskey bootlegger cannot operate without political connivance, just so was it impossible for the gasoline bootlegger to function without the same aid. This, we quickly discovered. A certain type of politician began to howl. His cry fell on deaf ears. Governor Pinchot's instructions were to clean up the mess.

From February to September of this year we collected a total of $918,300 in delinquent taxes alone. These figures represent collections made as a result of our investigations, and which no attempt at collection had been made until the coming of the present administration. We are now collecting an average of $125,000 delinquent taxes per month, or at the rate of $1,500,000 per year. The total delinquent account under the old act was $3,698,558. As gasoline tax money builds Pennsylvania highways, that meant that 616 miles of improved, hard roads were withheld from the taxpayers of Pennsylvania in delinquent taxes only, to say nothing of the amounts never reported in earlier months.

We have started more than 600 criminal prosecutions for violations committed under the old act. We have revoked the permits of more than 300 retail gasoline dealers, and we would have revoked many more had the present act not been passed. For under the present act, retailers need have no permits.

Under the liquid fuels tax act now in force, our cost of collection is much less than it was before. Thus, in September of this year the payrolls and other ex-

(Continued on Page 31)

*Before American Petroleum Institute, Chicago, by A. L. Delahunt, in charge of gasoline tax collection in Pennsylvania.

Improvements in Automatic Stations

Two Major Installations Have Been in Operation Sufficient Time to Demonstrate Commercial Practicability

By T. D. Williamson
Electrical Engineer, Tulsa

Prior to the past five or six years the use of engineers, and the application of engineering principles was practically unknown to the petroleum industry, with the exception of the refining department. Since that time the work of the engineer has become appreciated, as manifest by the employment of technically trained men in practically every department of the most successful oil companies, and the very gratifying results which they have accomplished.

No branch of the petroleum industry has benefited more from the work of the engineer than the pipe line department. The changes which have taken place are plainly evidenced by comparisons of pumping station design and equipment of today with that of but a few years ago. Many factors which were considered somewhat of a mystery several years ago are today plain facts, as a result of investigation by the engineering profession. Such a matter as pipe corrosion, which had been considered a necessary evil in the past, is now remedied by proper treatment of the pipe before being placed in the ground.

The confidence of the large pipe line companies in the ability of engineers to work out solutions of their problems was clearly shown by their interest in, and support of, the research committee of the American Society of Mechanical Engineers, assigned to the design of automatic pipe line pumping stations. This committee was organized in the fall of 1929, and has designed and sponsored the installation of two very complete and interesting experimental pumping stations at the International Petroleum Exposition held at Tulsa each fall. The objective of the committee is to determine the fundamental principles in the design and operation of fully automatic pipe line pumping stations, and to locate and solve any problems which might prevent their successful operation.

A direct result of the work of this committee was the building of two fully automatic pipe line pumping stations by large oil companies. These stations have been in successful operation for many months, demonstrating that fully automatic control is commercially practicable.

Station Enlarged

The equipment and scheme of control of one of these stations was described in an issue of The Oil and Gas Journal early this year. Since that time this station has been enlarged, to take care of increased pipe line capacity, and certain changes made to improve the operating conditions.

This station now consists of three 250-horsepower squirrel cage motors direct connected to centrifugal pumps having a capacity of 40,000 bbls. per day, with a discharge pressure of approximately 800 pounds. Figure 1 shows a layout of the station, and is also a plan of the master control panel, which is located at the central control point. Motor driven valves are installed on the suction and discharge sides of each pump, enabling the pumps to be completely isolated, when not in operation. The valves and piping are also arranged so that any pumps, or combination of pumps, may be used.

This station is designed to be fully automatic; to take care of every contingency which might arise, and not require the attention of an operator. However, it is necessary that an operator at a central control point be kept informed of the conditions at the automatic station, and have a certain amount of control over the starting and stopping of the pumping units. This method of signals and control is termed the "master control system," and is operated over two telephone wires. A description of this control system will be given later.

Figure 2 shows two of the three pumping units in the present station, with motor operated valves and control equipments. Automatic devices for the protection of the station equipments are provided as follows:

The bearings and stuffing box of each pump-motor unit is provided with thermal control equipments, which are set to actuate electrical contacts, should the temperature exceed a safe value. This electric circuit is connected with relays, which when operated will stop the pump-motor unit which has developed the hot bearing.

A pressure control unit is installed on the suction side of the station, which is so connected in the electric control circuit that should the suction pressure drop below a predetermined value all motor-pump units are stopped. This serves to protect the station in case a line should break between this station and the next previous station along the pipe line. Since centrifugal pumps, running without fluid, are subject to considerable damage, this pressure control is necessary to protect the pumps.

Originally it was planned to protect the automatic station against broken pipe lines, on the discharge side, by means of a flow meter, having an electric contact set at an abnormally high value. This arrangement should be satisfactory, based upon the characteristics of centrifugal pumps that flow increases with decreased head. However, in this case, but a fixed amount of oil is delivered to the automatic station, hence it is impossible for this volume to be increased, even though the pipe line should break, and the head decrease materially. It was, therefore, found that a pressure control device, having an electric contact set for a certain minimum value will satisfactorily protect the station against broken pipe lines, and stopp all of the pump-motor units.

An automatic sump pump control is provided, which will start the pump when the fluid reaches a predetermined high level, and stop the pump when a low level is reached. The control is also arranged so that the sump pump cannot start unless at least one of the large pump units in the station is in operation. This precaution is taken to prevent the sump pump having to operate against full pressure of the pipe line.

A pressure control unit is installed on the discharge side of the station, having electric contacts set at a maximum pressure value. In case the pressure should reach this value, all pump-motor units are stopped, thus preventing the bursting of the pipe line due to excess pressure.

Master Control Panel

Referring again to Figure 1, this represents the master control panel, which is installed at the central control point, a headquarters pumping station along the pipe line. In this case the central control point is located about 18 miles from the automatic station. This master control panel, which consists of an etched zinc plate, size about 2'x3', is installed in the operator's office. It is designed to show an exact picture of the automatic station, with each valve, pump, etc., in its correct relative position. Thus the operator may visualize the operating conditions in the automatic station by a glance at this control board.

At the bottom of the panel is shown the main pipe line which runs past the station. The flow of oil through this line is from right to left. A shunt pipe line, for the automatic station, is connected in the main pipe line at the right "head gate" and passes through the strainer, to any one or all of the main pumps according to the setting of the motor-operated valves.

In the operation of this control panel, the colored lights above each equipment indicate whether the valve at the automatic station is "open" or "closed"; the motor-pump unit "stopped" or "running," etc.

A control room at the central control points contains the necessary relays, connectors, batteries, etc., to receive the signals from the automatic station, and to dispatch the necessary control signals to the automatic station.

In this example of the operation of the

(Continued on Page 31)

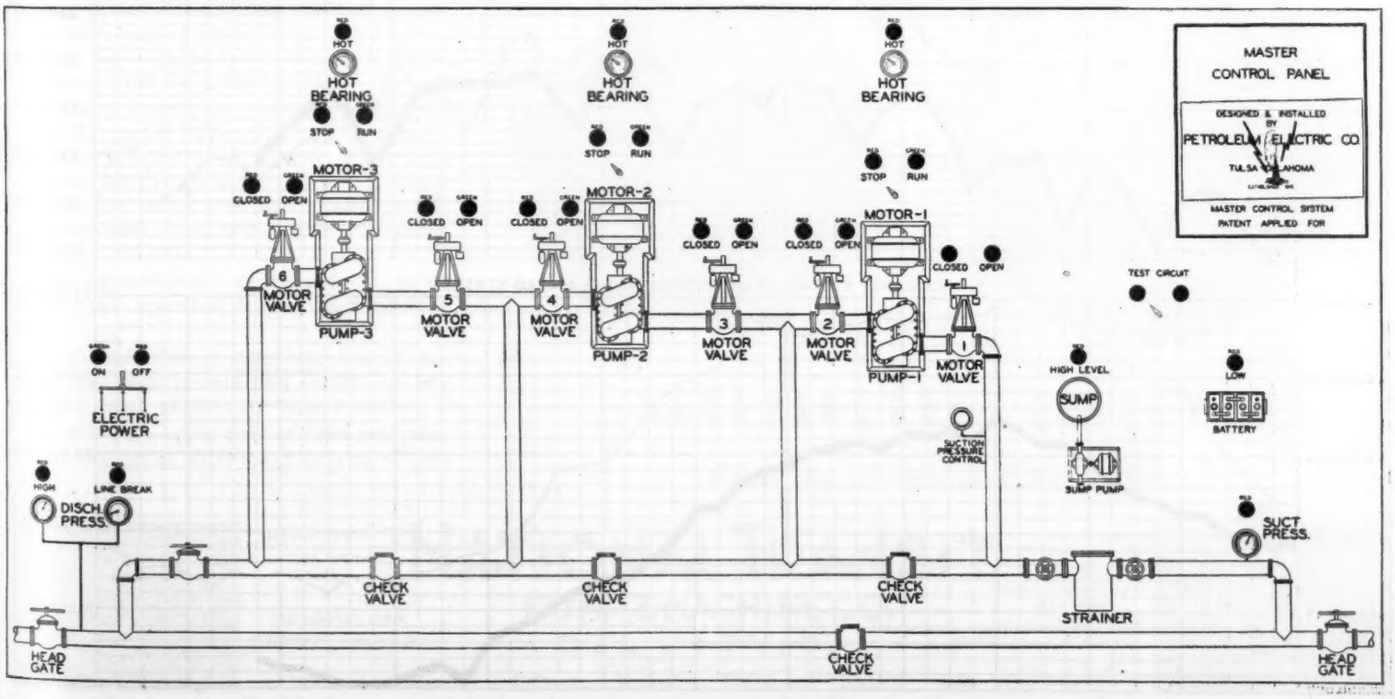


Diagram of master control panel for automatic pipe line control system.

Refiners Discuss Technical Problems

Vapor Pressures in Motor Fuels and Merits of Treating Processes Feature A.P.I. Meetings

By Robert C. Conine

Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, Nov. 12.—The amassed technical data which have resulted from the work of trying to determine the respective shares of the refiner and the automobile manufacturer in the responsibility of providing the motorist with freedom from the ills which lack of co-ordination have brought in the way of vapor lock and engine knock underwent critical examination at the sessions of the refining division of the American Petroleum Institute here, November 10 to 12. It was the consensus of those active at the meetings that the industry's problems from the technical side are much nearer solution than they were at the St. Louis meeting this spring.

Vapor Pressures

Following the presentation of the paper, "Permissible Vapor Pressures in 1931 Cars," by Drs. O. C. Bridgeman, H. S. White and F. B. Gary, all of the Bureau of Standards, Chairman E. H. Eddleman, of the American Refining Properties, called upon R. C. Alden, Phillips Petroleum Co., for a discussion. Mr. Alden stated that an apparent discrepancy existed between the experience of many refiners and the figures that would be found in a study of the charts presented in the paper. He warned that there is much more to be learned about vapor lock and pointed out that experience over a period of four years dictated the following vapor pressure specifications: 13 pounds for territories where the average maximum atmospheric temperature is below 45° F.; 11¾ pounds where the average maximum atmospheric temperature is between 45° and 65° F.; 10½ pounds where this temperature is 65° and 75° F.; 9¼ pounds where this temperature is between 75° and 85° F.; and 8 pounds for temperatures above 85° F.

Sydney Bevin, of Tide Water Oil Co., called for a discussion of whatever efforts have been made to co-operate with automobile engine designers, and Doctor Bridgeman reported that shortly after the completion of tests run on automobiles the data were assembled and sent to the car manufacturers. The information covered fuel temperatures and the permissible amount of vapor pressure that could be used on those cars. In most cases it was possible to show very definitely, Doctor Bridgeman said, that due to the temperatures obtained in their fuel feed systems the average gasoline, as indicated by the Bureau of Mines report for the country, would not be satisfactory for operation of their cars. It was also possible to make suggestions pertaining to redesign of fuel feed systems.

A. Papich, of D. C. Sparkman Co., took up the discussion from the viewpoint of the automobile engine designer. The automobile industry, according to Mr. Papich, did not have to wait for the report of the Bureau of Standards to have its attention called to the problem of vapor lock. The trouble was early found to be complicated but not as serious as sometimes considered. Mr. Papich took issue with the statement that most of present day automobiles would experience vapor lock with the average gasoline in warm weather.

"If a fellow drives a car in which the valves are not latched properly, or if he burned out his valves and is having trouble, he is bound to lay it on vapor lock * * * the carbureter may be badly adjusted and so on. The automobile industry has done considerable work in trying to reduce the temperatures, but there is a limit."

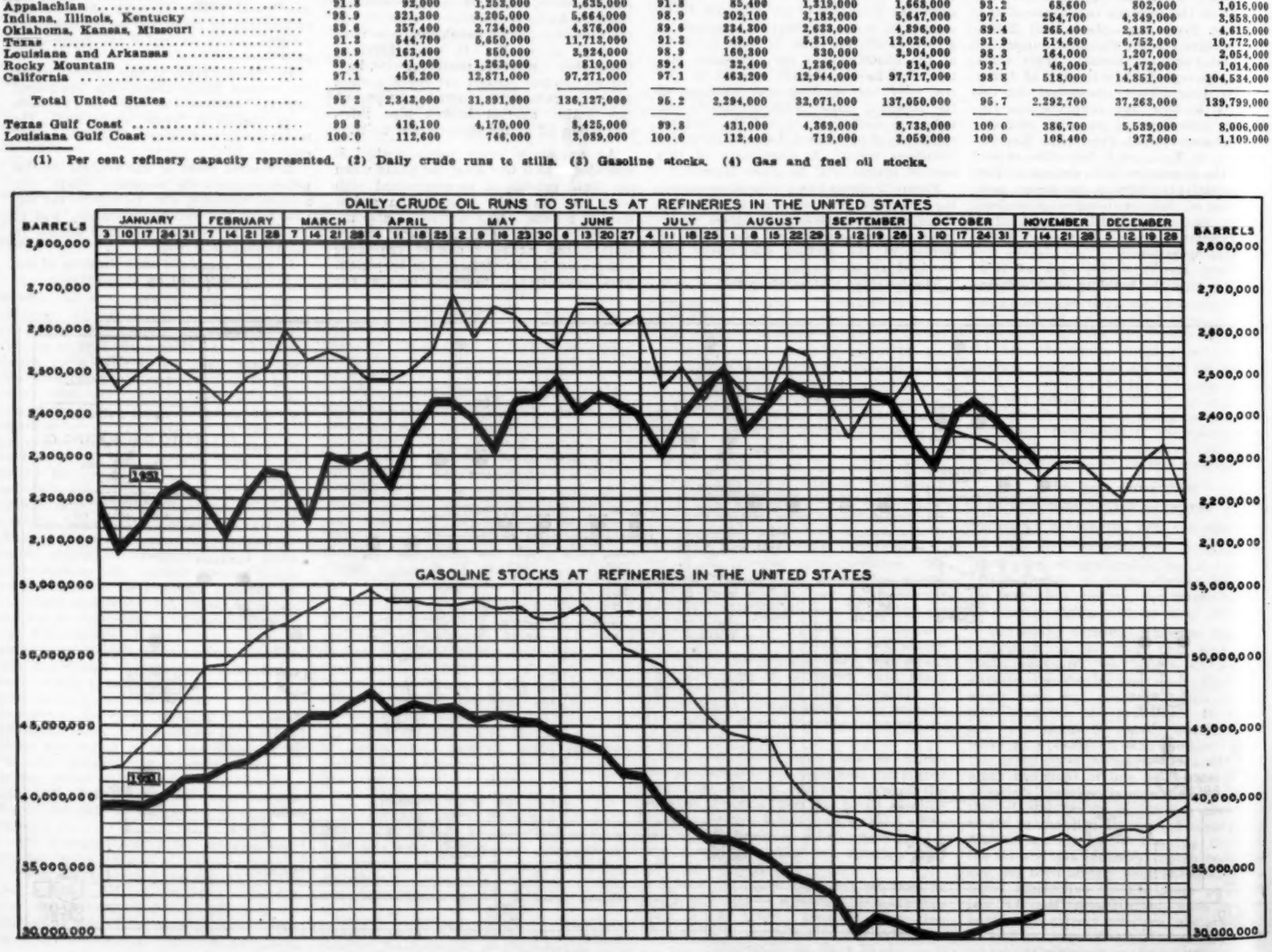
(Continued on Page 88)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending November 14:

	Week ending November 14, 1931				Week ending November 7, 1931				Week ending November 15, 1930			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	467,000	4,066,000	10,234,000	100.0	467,300	4,116,000	10,378,000	100.0	461,400	5,643,000	11,936,000
Appalachian	91.8	92,000	1,252,000	1,635,000	91.8	85,400	1,319,000	1,668,000	93.2	68,600	802,000	1,016,000
Indiana, Illinois, Kentucky	98.9	321,300	3,205,000	5,664,000	98.9	302,100	3,183,000	5,647,000	97.5	254,700	4,349,000	3,858,000
Oklahoma, Kansas, Missouri	89.6	257,400	2,734,000	4,376,000	89.6	234,300	2,633,000	4,396,000	89.4	265,400	2,187,000	4,615,000
Texas	91.3	544,700	5,650,000	11,713,000	91.3	549,000	5,810,000	12,026,000	91.9	514,600	6,752,000	10,772,000
Louisiana and Arkansas	98.9	163,400	850,000	3,924,000	98.9	160,300	830,000	3,904,000	98.3	164,000	1,207,000	2,054,000
Rocky Mountain	89.4	41,000	1,263,000	810,000	89.4	32,400	1,236,000	814,000	93.1	46,000	1,472,000	1,014,000
California	97.1	456,200	12,871,000	97,271,000	97.1	463,200	12,944,000	97,717,000	98 8	518,000	14,851,000	104,534,000
Total United States	95 2	2,343,000	31,891,000	136,127,000	95.2	2,294,000	32,071,000	137,050,000	95.7	2,292,700	37,263,000	139,799,000
Texas Gulf Coast	99 8	416,100	4,170,000	8,425,000	99.8	431,000	4,369,000	8,738,000	100 0	386,700	5,539,000	8,006,000
Louisiana Gulf Coast	100.0	112,600	746,000	3,059,000	100.0	112,400	719,000	3,059,000	100 0	108,400	972,000	1,109,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1931 based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above tables.

"A REMARKABLE RECORD"

—says Dan O'Leary

D. O'LEARY, *Chief Engineer*
Roystone Pumping Station, Pennsylvania Gas Company, Ludlow, Penna.

"THIS valve has been in continuous service since we received it three years ago and up to now has never had any replacing or repairing done on it.

"This is certainly a remarkable record for a compressor valve."

TRANSIT COMPRESSOR VALVE

THE illustration at the right shows the TRANSIT Ring Plate Gas Compressor valve disassembled after three years of operation.

Both valve plates and seats show some wear. The seats were purposely made very narrow, their width being easily seen in the illustration. Wear on the valve guides is very slight, not more than .004" or .005" on diameter.

Valve plates were in constant slow rotation. This is proved by the high polish on the back of the valve plates, where the buttons rested. The spring buttons themselves were somewhat reduced in diameter, and they also showed wear where they came in contact with the valve guard.

Eleven of the eighteen springs showed no perceptible wear. The other seven showed wear, and had lost a coil or two. All springs, however, were sufficiently strong to exert force on the valve plates. In other words the valve was functioning perfectly when removed.

From appearances, we believe the valve would have operated for at least another year.

We manufacture a complete line of gas engine gas compressors. Of course, all are equipped with these new type valves.

We will also equip new or used compressors of any make with valve service of this type.

(From An Unretouched Photograph)

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SALT LAKE CITY, UTAH
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NATIONAL TRANSIT PUMP & MACHINE CO.
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PHOENIX, ARIZ.
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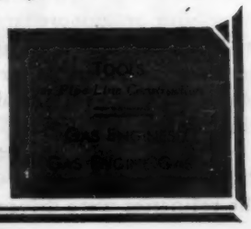
LOS ANGELES
Republic Supply Company of California

ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

NEW YORK PHILADELPHIA CLEVELAND PITTSBURGH LOS ANGELES HOUSTON TULSA NEW ORLEANS



The OIL and GAS JOURNAL

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Two Rules Govern Vapor Lock Problem

"Keep Heat Out of the Fuel System" Is One of Them and the Other Is "Keep Propane Out of the Gasoline"

By O. C. Bridgeman, H. S. White and F. B. Gary
Bureau of Standards, Washington, D. C.*

The permissible vapor pressure for freedom from vapor lock in the average automobile on the road today is very low. Some cars are very susceptible to vapor lock, while others are comparatively free from this trouble. The majority of them, however, are provided with fuel systems which attain temperatures considerably higher than are necessary, in the light of our present knowledge regarding fuel system design.

Gasolines can be produced which will give freedom from vapor lock in all of these cars, but the Reid vapor pressure at 100° F. would have to be below 6 pounds per square inch in order to do this, and this limitation materially reduces the percentage of suitable gasoline available.

While such a product might be satisfactory in hot weather, it would be definitely unsatisfactory in cold weather for

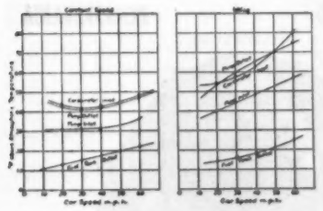

Figure 1—Effect of speed on average fuel line temperatures of cars tested.

engine starting; and there would be occasions during the spring and fall months in the transition period between winter and summer gasolines when engine starting might be unsatisfactory. It, therefore, appears practically impossible to produce gasolines which will give both the desired ease of starting and the desired freedom from vapor lock with present-day automobiles at all seasons of the year, since it is impractical to adjust the quality of the gasoline closely to seasonal variations in temperature.

Burden on the Refiner

The designers of carburetors have essentially reached the limit in lowering the temperature at which engine starting will be satisfactory with a given volatility of gasoline. The burden of producing a gasoline giving satisfactory starting is, therefore, entirely upon the refiner. If the refiner produces such a gasoline, vapor-lock troubles are likely to be encountered in a considerable number of cars. While it is necessary for the refiner to make a compromise in the volatility of his product to ensure the optimum performance, both as regards starting and vapor lock, with cars on the road at present, the burden of eliminating vapor lock in forthcoming models is largely upon the car manufacturer.

It should be pointed out, however, that even with marked improvements in fuel-system design, a careful control of the vapor pressures of gasolines will be necessary. Further, knowledge of the fact that high fuel-line temperatures are the major contributory causes of vapor lock at present does not in any way condone the marketing of gasolines containing propane.

The presence of propane contributes enormously to the vapor-locking tendency, whereas it has a negligible effect on engine starting. Removal of propane is, therefore, the only way of controlling the properties of gasolines so as to obtain the maximum ease of starting together with maximum freedom from vapor lock.

Simple Changes Suggested

At the 1931 midyear meeting the results of a survey of fuel-line temperatures in 27 cars were presented, and several comparatively simple changes in fuel-system design and installation were suggested as a means of reducing fuel-line temperatures. In order to ascertain whether any material improvements were made in the new models, the Co-operative Fuel Research Steering Committee authorized a similar survey of 1931 cars. The present report deals with the results of this survey, which covered 47 out of the 65 distinct models of cars on the market.

Marked improvement was found in some cars, while others were decidedly worse than in 1930. The net result is practically unchanged; for, on the average, the 1931 cars are very slightly hotter than the average found in the 1930 survey. This unchanged situation is due in part to the fact that the results of the 1930 survey were not available in time so that full advantage could be taken of the conclusions in designing the 1931 models. There is evidence, however, that there will be considerable general improvement in the 1932 cars. The present survey indicates that, in hot weather, the permissible vapor pressure with 1931 cars is certainly less than 8 pounds per square inch, and probably less than 7 pounds per square inch if freedom from vapor lock in about 90 per cent of the cars is desired. These values apply to operation at sea level, while for altitudes between 5,000 and 10,000 feet, the permissible vapor pressure is still lower by approximately 2 pounds per square inch.

Experimental Procedure and Tests

The procedure adopted in making the test runs and the instrumentation were the same as those used in the previous survey. With all cars, constant speed runs at three different speeds were made. For 12 of the cars, speeds of 20, 40 and 60 miles per hour were employed. With the remaining cars, speeds of 20, 30 and 40 miles per hour were used. Each constant-speed run was of such duration that the temperature at each of the selected points in the fuel system reached a constant value. After each constant-speed run, the car was drawn over to the side of the road and the engine allowed to idle with the gears in neutral until the temperature at each point

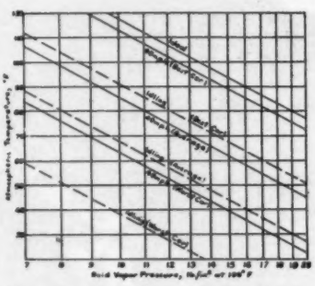

Figure 2—Relation between permissible Reid vapor pressure and atmospheric temperature.

reached a maximum value and started to drop.

In the case of fuel-pump and vacuum-tank systems, temperatures were measured at the fuel-tank outlet; the pump or vacuum tank inlet, the pump or vacuum tank outlet, and the carburetor inlet. With gravity-feed systems, temperatures were measured at the tank outlet, sediment bowl outlet (if so equipped) and carburetor inlet. Nickel resistance thermometers inserted in special fittings in the fuel system were employed for the temperature measurements. During each run, the atmospheric temperature was observed periodically.

Data were obtained on 47 models of 1931 cars. Of this number, two had gravity-feed systems, five had vacuum-tank systems, while the remaining 40 had fuel-pump systems. All results were expressed as temperature increases above the atmospheric temperature, since it has been found that, over fairly wide limits, the temperature increase of the fuel above the atmospheric temperature is independent of the particular atmospheric temperature existing during the run.

Temperature Increases Shown

The average of the temperature increases corresponding to the various points in the fuel-feed system, for all cars equipped with fuel pumps, are shown graphically in Figure 1 as a function of the car speed. The speed indicated on the plot of idling temperatures refers to the car speed prior to the idling period. In the case of the constant-speed runs, it is seen that the temperature increases slightly with increase in car speed, while on idling the increase with car speed is more marked. For further correlation of the data, a speed of 40 miles per hour was chosen as representative of an average set of conditions, and all values given in the remainder of this report will apply specifically to a speed of 40 miles per hour or to idling after a run at this speed.

Laboratory work at the Bureau of Standards has indicated that normally the temperatures at the following points are of major importance in determining whether vapor lock will occur:

System and location of point:

Pump—Fuel-pump inlet.

Vacuum tank—Vacuum-tank outlet.

Gravity feed—Sediment-bowl or tank outlet.

The temperature increases above atmospheric temperature at these points

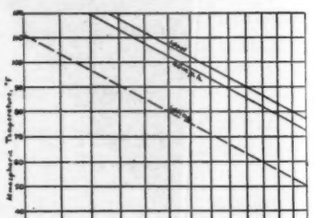

Figure 3—Permissible vapor pressures with car 10.

for the 47 cars are given in Table 1 for 40 miles per hour constant speed and for idling after a run at this speed. In the second column, the fuel system of each of these cars is classified, and in the third column the average atmospheric temperature during the runs on each car is listed. At constant speed, the temperature increases range from 4° F. to 54° F., with an average value of 32° F. On idling, the temperature increases range from 27° F. to 80° F., with an average value of 50° F.

Permissible Vapor Pressure Formula

From the fuel standpoint, the interest is mainly in the vapor pressure of the gasoline which can be used without encountering vapor lock. The permissible vapor pressure at any temperature can be computed from the formula:

$$t = 250 - 140 \log p_R \quad \ldots\ldots\ldots (1)$$

where t is the vapor-locking temperature in degrees F. and p_R is the Reid vapor pressure measured at 100° F.

In order to use equation (1) in conjunction with the temperature increases given in Table 1, it is necessary to adopt a value of the atmospheric temperature for purposes of discussion. Taking 90° F.

(Continued on Page 101)

TABLE 1—SUMMARY OF TEST DATA

Car	Fuel system	Atmospheric temp. °F.	ΔT above atmospheric temperature, Constant speed	ΔT above atmospheric temperature, Idling °F.	Permissible vapor pressure lbs. per sq. in., Constant speed	Permissible vapor pressure lbs. per sq. in., Idling °F.
1	MP	80	35	43	9.0	8.0
2	MP	70	30	66	9.8	5.4
3	MP	85	45	49	7.7	7.2
4	MP	80	35	41	10 6	8.2
5	MP	75	28	53	10.2	6.7
6	Vacuum	70	32	52	9.5	6.8
7	Vacuum	75	41	62	8.2	5.8
8	MP	80	34	56	9.2	6.4
9	MP	95	40	55	8.4	6.5
10	MP	75	4	27	15.0	10.3
11	MP	85	28	39	10.2	8.5
12	MP	90	38	54	8.6	6.6
13	MP	85	40	60	8.4	6.0
14	Gravity	85	26	45	10.5	7.7
15	MP	85	39	52	10.0	6.8
16	Vacuum	90	43	68	8.0	5.3
17	MP	90	43	60	8.0	6.0
18	MP	95	32	51	9.5	7.0
19	MP	90	18	34	12.0	9.2
20	MP	85	26	37	10.5	8.8
21	MP	85	37	54	8.8	6.6
22	MP	85	44	71	7.8	5.0
23	MP	90	26	41	10.5	8.2
24	MP	90	37	37	10.3	8.8
25	MP	70	26	46	10.5	7.6
26	MP	80	27	40	10.3	8.4
27	MP	85	38	72	8.6	4.9
28	MP	80	26	44	10.5	7.8
29	MP	85	27	32	10.3	9.5
30	MP	80	37	45	8.8	7.7
31	MP	75	29	66	10.0	5.4
32	MP	80	29	59	10.0	6.1
33	MP	70	24	58	10.9	6.2
34	Gravity	75	54	80	6 6	4.3
35	MP	80	36	56	9.0	6.4
36	MP	75	29	35	10.0	9.0
37	MP	80	39	54	8.5	6.6
38	MP	75	32	57	9.5	6.2
39	Vacuum	80	25	39	10.6	8.5
40	MP	90	33	49	9.4	7.2
41	MP	85	35	60	9.0	6.0
42	Vacuum	70	24	34	10.9	9.2
43	MP	80	39	41	8.5	8.2
44	MP	80	34	48	9.2	7.3
45	MP	90	33	47	8.6	7.5
46	MP	85	27	28	10.2	10.2
47	MP	90	39	50	9.5	7.0
	Average		32	50	9.5	7.2

*Presented at twelfth annual meeting of American Petroleum Institute, Chicago.

Temperature increases (ΔT) refer to pump inlet for MP systems, to vacuum-tank outlet for vacuum systems, and to tank outlet or sediment-bowl outlet for gravity systems.

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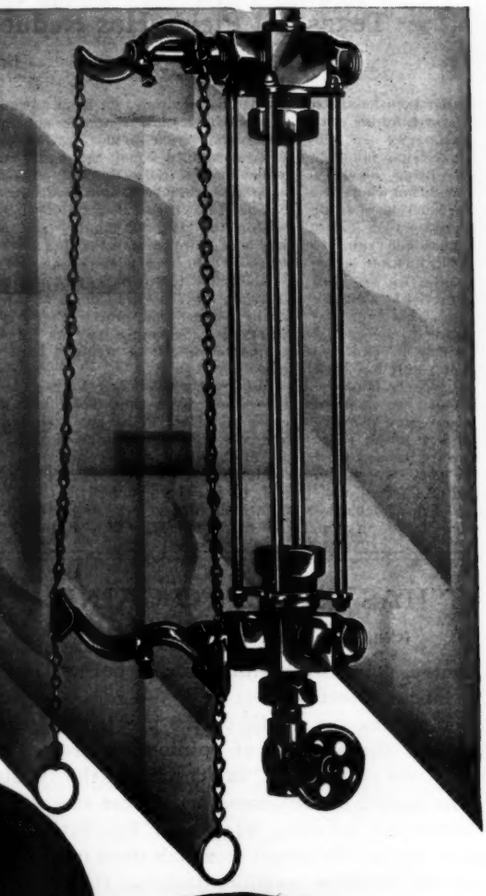

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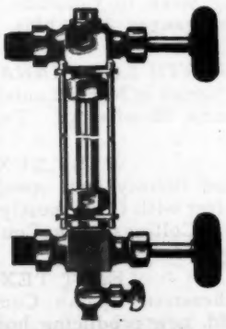

"SURE-DROP" "SENTRY" "SATURN" "SCREW TOP" "SILEX" "SAMSON"

Warehouse Stocks Practically Depleted

Long Period of Careful Buying and Shipment of Material to East Texas Oil Fields Has Reduced Supplies Available to Low Point

By L. G. E. Bignell
Petroleum Engineering Editor

For the past 18 months there has been a determined effort put forth by all companies in the petroleum industry to bring about a condition where the production of crude oil would about equal the runs to stills. Other economies have been practiced rigidly and have been applied to every department and the net result has been a vast improvement in general conditions and with the recent increase in prices for crude and gasoline there has been a marked upward tendency in the industry within the past two weeks.

During the long period of deferred drilling, proration and shutdown of fields by military order a considerable quantity of oil has been withdrawn from storage. Recent reports show that the actual daily production from fields in this country does not quite equal the daily runs to stills and statistically the industry is now in a very favorable position.

The East Texas Pool has been opened within the past 12 months and into it has been shipped many thousands of carloads of old and new equipment of all kinds and a recent survey of the various districts in the Mid-Continent area reveals the fact that practically every field warehouse belonging to the producing companies has been stripped bare of all material.

While the Oklahoma City and Seminole Pools were shut down by military order and East Texas has been produced under restricted conditions there has been a very active demand upon the older fields for all the oil they could produce and it has been noted that there has been a decided revival of activity in the old fields of Oklahoma, Kansas, Texas and elsewhere and many wells are again pumping that were shut down or pumped intermittently.

The companies have enforced strict orders regarding the purchase of new material during this period of curtailed production and have used up all material on hand and bought only such equipment and supplies as were actually needed for their operations. These purchases have been in small quantities only and most of them have been made through the purchasing departments after careful check has been made of stocks on hand.

Many companies have exchanged material with others and in this way have avoided the purchase of new equipment and all companies have pulled, plugged and abandoned a great number of wells and the salvaged material has been immediately put into use on other leases or shipped to the East Texas Field. It has been estimated that between 4,000 and 4,500 old wells in the Mid-Continent Fields have been pulled, plugged and abandoned during the low price period as it was impossible to produce them, with the amount of water many of them were making, and show a profit on the operation.

Engineering Based on Economics

During the past there has been a great tendency to maintain old wells on production regardless of whether they were making money for the company and it has been the policy of most companies to try to get the greatest possible amount of oil from each well and lease.

While conditions were unfavorable for producing oil because of the low prices paid for crude the executives of many companies have required their engineering and production departments to set up detailed records of each well and make a careful study of operating conditions. While records have been kept in the past it has been found that they were not subjected to the close scrutiny and detailed study that has been devoted

(Continued on Page 30)

WHAT HAS TEXAS TO GAIN?

(Continued from Page 20)

understand the country, painfully beating back to normal, is in no mood just now for business bating.

The wisdom of educating the public on the problems of the oil industry was proved by the pressure of opinion which compelled the co-operation of the oil states in checking the wasteful overproduction. The people of Oklahoma and Texas saw that the interests of the producing industry were their interest. People generally have yet to realize the extent to which their interests are affected by unnecessary gasoline taxation, doubling the price paid for motor fuel, by the "racket" that has grown out of evasion of that tax, cheating the state and the public and breaking down the industry, or the many other "rackets" in the marketing of petroleum products which the code was designed to stop.

The protest telegraphed by the Beaumont Chamber of Commerce to the attorney general against "any action that might retard development and result in greater unemployment among Texas workmen" is eloquent.

The code is an effort to place and keep the marketing of petroleum production on a decent and honorable basis, fair to all in the industry and just to the public. That was why it was approved at Washington. There is no difference of opinion on common honesty between Republicans and Democrats, whether in the national capital or in any state, and the interjection of partisan politics in Mr. Allred's comments will guide most people in their judgment.

High Spots in Field News

OKLAHOMA

Potentials in Oklahoma City Pool decline, some estimates having been too high. Trading in old properties reported.

SOUTHWEST TEXAS

Dry hole in Pettus Pool extension upsets calculations. Twenty-two new locations reported in Southwest Texas district.

CALIFORNIA

North Kettleman well flows 30,120 bbls. of exceptionally clean oil. State's allowable likely to be readjusted downward.

KANSAS

State remains under allowable. Deep tests in Ritz-Canton area. Stafford County wildcat adds to Ellsworth arch possibilities.

GULF COAST

New activity at Barbers Hill, with well proving Miocene sand on east side of dome. Unusually good record at Markham.

ROCKY MOUNTAIN AREA

Disappointing week in Colorado. First completion in Hobbs Pool for months gauges 2,400 bbls. South Dakota abandonment reported.

NORTH LOUISIANA-ARKANSAS

New permits issued in North Louisiana. Good gas wells reported in Jackson County, Mississippi. Trinity test in Panola County, East Texas.

WEST TEXAS

Western Ward County test, opening first Delaware sand pool there, fills 1,800 feet with fluid, mostly oil. Twenty locations staked in North Texas. Collingsworth County Block, Panhandle, to be tested.

EAST TEXAS

Test in southeastern Upshur County may mean new pool or extension of field, new producing horizon or small pumper. Now 3,037 wells in East Texas, 135 being completed during week with 91 locations.

Late Fields

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Nov. 17.—H. H. Weinert's No. 1 Ray in the Pettus Field, midway between Damac's No. 1 Ray on the northeast and Buchanan & Lefevre's extension well a half mile southwest, is dry at 3,940 feet and deeper than wells on either side. It badly upsets everybody as the location was presumed to be proven.

COLORADO

DENVER, Colo., Nov. 17.—The Prairie Oil & Gas Co.'s No. 1 Mortier, Section 2-5n-60, Morgan County, Colorado, 5 miles southeast of Greasewood Field, started coring at 6,449 feet, topped the Muddy sand at 6,465 feet and cored to 6,483 feet. The Muddy showed saturation and gas and indications are that it will make a well but will not stop to test but continue on to the Dakota. Out of one 8-foot core only 8 inches was recovered and of a 5-foot core 3½ feet were recovered.

OKLAHOMA

Another well was completed on the southwest edge of the Oklahoma City Field extending production one location to the west. This completion indicates that the southwest edge will yield large wells from the Wilcox sand. Many express the opinion that big production on the extreme southwest edge was proved by the completion of Kessler Oil & Gas Co.'s No. 1 Canning, SE cor., Section 22-11-3w, the southwesterly producer in the field, when the test was bailed down and cleaned out. It was estimated to be a 30,000-bbl. well. No gauge was taken and it will remain shut in until December 4, when the first gauge will be taken. The well is the west offset to the Phillips Petroleum Co.'s No. 1 Egermier, which had a potential of 29,124 bbls. a day. The total depth of No. 1 Canning is 6,561 feet and the top of the Wilcox sand is 6,453 feet.

Potential gauge was taken Sunday on the Morgan Petroleum Co.'s No. 1 Stout in Section 2-11-3w, and it flowed 5,525 bbls. of oil in 4 hours. It was given an adjusted potential of 11,050 bbls. The well ran wild for nearly a week about a year ago and at that time was estimated to be making approximately 1,500 bbls. an hour.

The Oklahoma Corporation Commission

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Over Three Thousand East Texas Wells

Ninety-one Locations Reported During Week and 135 Completions, 1 Dry and 13 Abandoned Locations. More Pumping Wells

By L. E. Bredberg

DALLAS, Tex., Nov. 16.—East Texas scored its three thousandth well this week, reporting a total of 3,037 completed November 15, 2,957 of which reported their production totaling 368,481 bbls. for that day, an average of 124.6 bbls. per well. Total pipe line runs registered 385,319 bbls., or 16,838 bbls. more per day than production, pipe line companies continuing to draw on storage, the daily occurrence for the past two or three weeks, since the wells were cut back to 125 bbls. per day in the last proration order issued.

Martin Oil Co.'s No. 1 Elder in the Kilgore Townsite, Mary Van Winkler Survey, on the eastern edge of the producing area, Gregg County, is now cleaning out to shoot. Total depth is 3,566 feet and top of sand is 3,545 feet. It appeared previously as only a small pumping well, but the owners decided to shoot it to increase its production. This will be the first well in the district to be shot to increase production, a method which can be little practiced in this district due to the sand and water conditions existing as they are. Wells on the western side of the field cannot be shot because of danger of bringing in water, but those on the eastern edge, where the sand overlays the Georgetown lime can be given small shots, there being no danger of water on that side of the field.

Ninety-one Locations

There were 30 locations in northern Gregg and 13 in southern Gregg this week, with 11 in northern Rusk and 21 in southern Rusk, 10 in Smith and 5 in Upshur County, and one wildcat location in Henderson County, making a total of 91 first reports for the week, eight less than last week. There were 135 completions for the week, one of which was a dry hole in wildcat territory in Nacogdoches County, and 13 of which were abandoned locations, making an actual completion record of 121 producers, a drop of 28 in number of completions from the previous week's record. With completions falling off as they have been during the past two weeks, there is a good chance that next week will see them fall below the 100 mark, for the first time in several weeks.

Eastland Oil Co.'s No. 1 Victory in the southwestern corner of the Evans Survey, approximately 1½ miles due north of Gladewater, Upshur County, drilled into salt water at 3,659 feet after topping the sand at 3,640 feet, making it imperative to plug back to shut off the water, or abandon the test. This is another western edge marker for the Gladewater area.

Hayter and others completed their No. 1 Muckleroy in Nacogdoches County as a dry hole at a total depth of 4,404 feet. Austin chalk was topped at 4,053 feet, and went out of the chalk at 4,318 feet. Georgetown lime was topped at 4,358 feet.

Seven Wells Corp.'s No. 1 Douglas in the K. H. Douglas Survey, Henderson County, is now shut down at 4,002 feet. It went out of the Austin chalk at 3,542 feet. This test also looks like a dry hole for Henderson County, which as yet has not produced any oil.

Curtailing Drilling

There are 109 idle derricks standing in the East Texas district, evidence of the companies curtailing their drilling operations as per the general consensus of opinion, and desires to eliminate useless drilling at this time. The 13 abandoned locations for the week also contribute to this fact.

Refineries Resume

All refineries except one are operating in the district, all of them running to but partial capacity. The East Texas Refining Co. has constructed foundations for a new cracking unit at its Longview plant, this unit to effect a saving of fuel oil.

The Tidal Oil Co. is erecting the first derrick to be placed on pilings in the East Texas district, located in Lake Davernia, on its Lake Davernia lease, in the Painter Survey, Gregg County. The well will be carried as its No. 2, but is the first to be placed out in the lake.

Stanolind Oil & Gas Co. and Simms Oil Co.'s No. 1 Miller, on the western edge of the Gladewater area, southwest of the town in the St. L. Davis Survey, is another western edge marker for Gregg County, requiring pumping equipment to produce it. The test was drilled to 3,609 feet, or minus 3,335 feet, and the well showed salt water, necessitating the plugging back to shut off the water. It was plugged back to 3,174 feet, and plug drilled out to 3,601 feet.

Flanagan's No. 1 Walker, in the southern part of the same survey as the above well, is also going on pump. Humble Oil & Refining Co.'s No. 1 Mackey in the S. Harrel Survey, on the northwestern edge of the Gladewater area, Upshur County, is also preparing to pump. It swabbed dry from sand logged from 3,636-47 feet.

More Pumping Wells

More wells on the edges are proving small producers, or refuse to flow, the result of which is that more pumping equipment is needed to handle this specific situation, and as the field is drilled more complete on the edges, and pressures gradually decline, much pumping equipment must be purchased. The eastern side of the Joiner area, Rusk County, was the first part of the field to require pumping equipment as the sand was comparatively thin in this area, and pressure was not sufficient to flow the wells. However, this situation is spreading to other parts of the field, adding to the expense of producing many of the leases. Curtailment of the wells to 125 bbls. per day has no doubt had effect in preserving pressures in the field, and saving many other operators and companies the expense of putting more wells on pump to produce them.

Ed Hyde, head of the Westyde Investment Co. of Forth Worth, is assembling a 2,000-acre block due south of the town of Athens, in Henderson County, and will start a well in the near future somewhere on the eastern side of the block.

Burning Wells

National guardsmen in the camp north of Overton had another experience with burning wells in the district this week and had to hurriedly move their camp and equipment to safety when Russell and others' No. 1 Orgin in the Womack Survey caught fire, severely burning G. E. Webb, Jr., worker on the well. This marks the fifth oil well fire since troops entered the field on August 17, none of them proving fatal.

Pure Oil Co. is cementing 9⅝-inch casing at 3,768 feet in lime on its No. 1-T Davis, Trinity sand test in the north end of the Van Field, Van Zandt County.

Petroleum Refractionating Co. started operating its 10,000-bbl. refinery at Footes Switch, Gregg County, this week, averaging 1,395 bbls. per day in runs of crude oil to the plant. The Danciger Oil & Refining Co. is supplying the plant with crude oil from its leases in Gregg County. A gathering system has been completed from these leases and have been running oil to storage at the plant for some time. The plant is located on the I.&G.N. Railroad, and has a 52-car loading rack at the plant.

SHIPMENTS THROUGH TRUNK LINES

Company, size and destination—	Bbls.
Atlantic P. L. Co., 10-inch, Atreco	8,819
Arkansas P. L. Co., 8-inch, Shreveport	8,912
Atlas P. L. Co., 8-inch, Shreveport	.....
Gulf P. L. Co., 2 and 8-inch, Oklahoma	16,928
Gulf P. L. Co., 2 and 8-inch, Port Arthur	14,402
Houston Oil Co., 8-inch, Amigo	.....
Humble P. L. Co., 2 and 10-inch, Shreveport	48,875
Humble P. L. Co., 2 and 8-inch, Todd	46,762
Liberty P. L. Co., 8-inch, Rusk	4,012
Magnolia P. L. Co., 10-inch, Center	15,728
Magnolia P. L. Co., 12-inch, Corsicana	54,675
Shell P. L. Co., 10-inch, Houston	25,518
Sinclair Texas P. L. Co., 12-inch, Teague	37,250
Sun P. L. Co., 10-inch, Sun City	29,321
Texas Empire P. L. Co., 12-inch, Port Arthur	45,482
Texas P. L. Co., 10-inch, Douglass	37,322
Tidal Ref. Co., 6-inch, Carthage	6,134
Total	400,140

SHIPMENTS TO REFINERIES

Company and location—	Bbls.
Arrow Ref. Co., Overton	1,001
Beacon Ref. Co., Henderson	925
Boone Ref. Co., Arp	319
Central Ref. Co., Friars Switch	S.D.
Constantin Ref. Co., Overton	S.D.
Diamond Ref. Co. (formerly Rusk Ref. Co.), Overton	274
East Texas Ref. Co., Longview	4,136
East Texas Ref. Co., Friars Switch	4,118
Gladetex Ref. Co., Gladewater	87
Gladewater Ref. Co., Gladewater	100
Kilgore Ref. Co., Kilgore	717
W. B. Mackey Ref. Co., Gladewater	192
Overton Ref. Co., Overton	925
Petroleum Refractionating Co., Longview	1,395
Sinclair Oil & Gas Co., Longview	1,716
Slack Ref. Co., Camp Switch	S.D.
Southern Oil Ref. Co., Reed Switch	750
Taylor Ref. Co., Tyler	2,394
Total	19,049

SHIPMENTS BY TANK CAR

Company and location—	Bbls.
Houston Oil Co., Kilgore	1,447
Cherokee Chief, Gladewater	539
Pilot Oil Co., Willow Springs	469
Simms Oil Co., Willow Springs	64
Tidal Ref. Co., Camp Switch	374
Tyler Pipe Line Co., Tyler	319
Total	3,212

Total daily average distribution	422,401
Total daily average production	402,265
Daily average from storage	20,131

EAST CENTRAL TEXAS WILDCATS

Week Ending November 16

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
H. B. McConnell et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S half of 129-ac. tract, M. Main Sur.	Rig up and S.D.

BOWIE COUNTY

Tom Bell's No. 1 Merritt, 1,225 ft. from N and 875 ft. from E line of survey, T. S. McKinney Sur.	Coring 3,530 ft.
Logan and Elliott's No. 1 J. W. Smith, 9,600 ft. S and 2,500 ft. W of NE cor. of survey, Charles Lewis Sur.	S.D. 4,503 ft.
W. S. Langford's No. 1 W. W. Whybark, 200 ft. from S and W of SW cor. of J. A. Dyer Sur.	S.D. 1,860 ft.
Lee Timberlake et al's No. 2 Julius N. Tidwell, 655 ft. from E and 2,510 ft. from S of survey in L. M. Rice Sur.	S.W. on drill stem test; S.D. 3,012 ft.

CHEROKEE COUNTY

Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
Denman et al's No. 1 Mrs. Renfroe, 330 ft. N of S line and 330 ft. E of W line of farm, Uriah Moore Sur.	Derrick.
Wilson & Stubbs' No. 1 L. Robart, 450 ft. from S and 150 ft. from W of lease, J. B. Wolfin Sur.	Drlg. 1,820 ft.

DALLAS COUNTY

Paris' No. 2 Wilkinson, 2,787 ft. from NW and 3,241 ft. from SW of John P. Anderson Sur.	T.D. 1,230 ft; S.D.
Joe Wilson's No. 1 fee, 600 ft. from N line and 600 ft. from W line of 1,500-ac. tract, John Scroggy Sur.	Spud and S.D.

DELTA COUNTY

Worthington et al's No. 1 Pejernett, 776 ft. from S and 150 ft. from W in E. Chick Sur., 1½ miles W of Horton	S.D. 3,315 ft.

ELLIS COUNTY

Clark Brooks' No. 1 C. W. Golliday, 300 ft. from S line and 300 ft. from E line of tract and survey, John Bones Sur.	Ran 8-in. csg. 1,425 ft.
E. M. Roger's No. 1 John Lee Winn, 1,650 ft. from E and 510 ft. from S of Orland, Orlo Wheeler Sur.	S.D. 1,435 ft.
Worthen Pet. Co.'s No. 1 Cerf, 2½ miles NE of Ennis	Drlg. 2,260 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tract, W. M. Dawson Sur.	Derrick.

GREGG COUNTY

Arkansas Fuel Oil Co.'s No. 1 F. T. Rembert, 330 ft. from S and W lines of 166-ac. tract and 83-ac. lease, John Ruddle Sur.	Derrick.

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COMPLETIONS IN EAST TEXAS

Week Ending November 14

Gregg County

Arkansas Fuel Oil Co.'s No. 2 Adrian McCrary, top sand 3,508 feet, initial production 90 bbls. in 30 minutes through open tubing, total depth 3,533 feet. Same company's No. 2 Allison, top sand 3,601 feet, initial production 86 bbls. in 30 minutes through open tubing, total depth 3,625 feet. Same company's No. 1 L. D. Tuttle, top sand 3,596 feet, initial production 98 bbls. in 30 minutes through open tubing, total depth 3,624 feet. Same company's No. 4 Whittaker, top sand 3,529 feet, initial production 100 bbls. in 30 minutes through open tubing, total depth 3,557 feet. Atlantic Oil & Production Co.'s No. 4 E. Burnside, top sand 3,526 feet, initial production 186 bbls. per hour through open tubing, total depth 3,551 feet. Bishop Oil Co.'s No. 1 Richie, top sand 3,560 feet, initial production 115 bbls. in 30 minutes through open tubing, total depth 3,590 feet. Columbia Oil & Gas Co.'s No. 1-A Doby, top sand 3,547 feet, initial production 100 bbls. per hour through open tubing, total depth 3,569 feet. Cranfill & Reynolds' No. 2 S. S. Barton, top sand 3,676 feet, initial production 142 bbls. per hour through open tubing, total depth 3,698 feet. Deep Rock Oil Co.'s No. 2 Jones, top sand 3,532 feet, initial production 150 bbls. per hour pinched through tubing, total depth 3,553 feet. Empire Gas & Fuel Co.'s No. 2

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Western Ward County Holds Attention

Shipley-Byrd Wildcat Is Standing With 1,800 Feet of Fluid, Mostly Oil. Operations in North Texas and Panhandle Districts

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 16.—John F. Shipley, Byrd and Harmon's No. 1 Monroe, wildcat test located in Section 3, Block 1, W.&.N.W. Survey, western Ward County, which showed up last week as a potential producer, opening up the first Delaware sand pool for Ward County, is still standing shut down at a total depth of 4,665 feet, having filled 1,800 feet with fluid, mostly oil, and is waiting to be shot or completed at its present depth, the owners being out of the State on business at the present time.

This test is approximately 13 miles southeast of the Wheat Field, Loving County, in which 40 gravity, sweet oil is produced from the Delaware sand, the oil registering about 7.5 degrees higher than that found in the Monroe test. Oil in this latter test also registered around 96 degrees near bottom of hole, bearing out the possibility of nearness to water. If this is considered true the well may not be shot, for fear of bringing in water and ruining chances for production without considerable working over.

New Locations

There were two new locations staked in Ward County this week, adding to the county's activities. These are: Gulf Production Co.'s No. 9 Hutchings in Section 5, Block F, G.M.M.B.&A. Survey, in the northern part of the county, and Massie and Sturm's No. 1 Green in Section 4, Block 34, H.&T.C. Survey.

Stanolind Oil & Gas Co.'s No. 1 Brown, Section 26, Block B-29, Public School lands, approximately one-half mile from production, is now running 5-inch casing to 2,370 feet, the test spraying a little oil.

Shell Purchases Crude

Three days before the new posting of 50 cents for crude oil went into effect in Winkler County on November 2, the Shell Petroleum Corp. purchased 900,000 bbls. of Winkler County crude from the American Petroleum Co. at Pyote, this oil is in storage. The oil is to be drawn out of the storage within six months after signing of the contract, to be run from the tank farm at Pyote to the Shell Pipe Line Co.'s pumping station and line at Wink where it will be taken over by that company. Transportation charges to the Wink station will be 2½ cents per barrel, and price for which the oil sold was 35 cents, or the former posted price. From 6,000 to 10,000 bbls. per day will be transported from the tanks until it is all withdrawn. The Shell Pipe Line Co. has two 6-inch lines and an 8-inch line from Winkler County to the Monahans tank farm, and a 6-inch line from that point to McCamey. It has a 10-inch trunk line to Houston to serve the West Texas district, which will transport this new consignment taken over from the American Petroleum Co. This is the largest oil sale made in West Texas for many months, and gives the Shell Petroleum Corp. an added supply of cheap crude. The line to Houston has been transporting an average of around 11,000 bbls. per day and has a daily capacity of 40,000 bbls.

Northwest Pecos Test

Northwestern Pecos County is to receive another test, George H. Anderson of Dallas and Thomas and Brann of San Angelo now moving in materials on location in Section 78, Block 8, H.&G.N. Survey, approximately 20 miles north of Fort Stockton. The contract calls for drilling the test 200 feet in the lime, Thomas and Brann to drill the test.

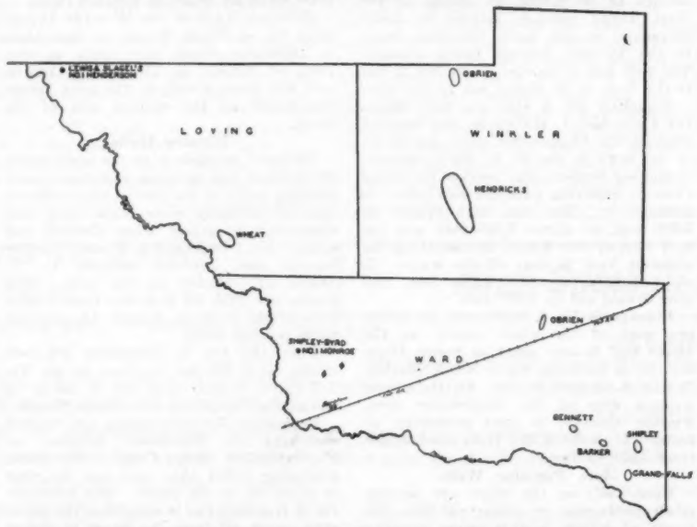
Southern Tom Green County also entered the active list again this week when G. W. Andrews spudded in his No. 1 Pugh in the James Eldridge Survey No. 73. This is to be a shallow test.

Southwest Oil Production Co. and Penn Oil Co.'s No. 1 Tubb, Section 3, Block B-27, western Crane County, is now running a string of 8¼-inch casing to 4,027 feet where it will be cemented. Total depth of the hole is 4,064 feet in lime. It made two bailers of oil at 4,010 feet.

The town of McCamey in southern Upton County is now being connected with the Texas Public Service Co.'s 8-inch gas line from the deep producing wells in the Big Lake Field, Reagan County, to Rio Vista, and will be supplied with sweet gas from those wells. It has heretofore been using sulphur gas piped from the Crane County pools.

The Plymouth Oil Co. is now financing the deep test on the Suggs ranch in Section 3,081, Block 28, H.&T.C. Survey, Irion County. This test is now known as the M. E. Davis No. 1 Suggs and is drilling at 5,385 feet in lime. The California Co. has assigned the E half of the E half of Section 3,074 and the east 160 acres of Section 3,086 as a contribution toward deepening the Suggs test.

WARD COUNTY'S FIRST DELAWARE SAND POOL



Plat showing location of various pools in Winkler, Ward and Loving Counties, and location of Shipley-Byrd's No. 1 Monroe, a location in Section 3, Block 1, W. & N. W., approximately 13 miles southeast of the Wheat Field, Loving County. This test is standing shut down at 4,665 feet, 2 feet in the Delaware sand, the producing horizon in the Wheat Pool. Eighteen hundred feet of fluid is standing in the hole, mostly oil, and the well is to be completed at this depth. It is a rank wildcat which has possibilities of opening up Ward County's first Delaware sand pool.

NORTH TEXAS PRODUCTION
Week Ending November 14

	Bbls.
Panhandle District	
Carson County	6,21
Gray County	39,46
Hutchinson County	12,33
Moore County	1,94
Wheeler County	44
Total production this week	60,48
Total production last week	67,48
Decrease	6,99
Wichita Falls District	
Archer County	12,20
Baylor County	59
Clay County	58
Cooke County	1,75
Foard County	73
Haskell County	15
Jack County	2,07
Montague County	4,08
Throckmorton County	54
Wichita County	17,94
Wilbarger County	13,23
Young County	12,02
Total production this week	65,21
Total production last week	65,70
Decrease	49
Ranger District	
Brown County	2,93
Callahan County	1,36
Coleman County	3,22
Comanche County	76
Palo Pinto County	35
Eastland County	2,72
Shackelford County	3,46
Stephens County	4,23
Total production this week	19,05
Total production last week	18,58
Increase	46

PANHANDLE

O. P. Dick is assembling a block of 4,000 to 6,000 acres in Collingsworth County, in the southern part of the county, centering around Section 20, Block 21, H.&G.N. Survey, and will drill test as consideration for the leases. It is to be located southeast of Downey's No. 1 Beall wildcat, which was previously drilled and encountered a good showing of oil around 2,500 feet.

The Lone Star Gas Co. has purchased

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WILDCAT OPERATIONS IN WEST TEXAS

Week Ending November 16

Company, well, farm name, section and block—	Remarks:
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	S.D. 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	S.D. 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	S.D. 2,900 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine	S.D. 1,750 ft.
COCHRAN COUNTY	
Penn Oil Co.'s No. 1 Myrick, C Labour No. 80 of League 129, Carson County School Lands	Drlg. 3,300 feet.
CONCHO COUNTY	
Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 163, T.&N.O. Sur.	S.D.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	S.D. 1,350 ft.
CRANE COUNTY	
Southwest Oil Prod. Co. (Cranfill Bros.) and Penn Oil Co.'s No. 1 J. B. Tubb, 330 ft. from N and E of SW cor. of S 80 acres of NW cor. Sec. 3, Blk. B-27, P.S.L. Sur.	Slight show of oil 3,128-35 ft. and 3,445-55 ft.; drlg. 4,010 ft.; 2 bailers oil.
CROCKETT COUNTY	
Doleman & Moore's No. 1 Ferner 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and S.D.
CULBERSON COUNTY	
Kornrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land	S.D. 1,300 ft.

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending November 16

Company, well, farm name, section and block—	Remarks:
CARSON COUNTY	
Texhoma Nat. Gas Co.'s No. 1 Harrison, center NW, Sec. 40, Blk. 4, I.&G.N. Sur.	Drlg. 2,545 ft; top gas 2,390 ft.
Texhoma Nat. Gas Co.'s No. 1 Dover, 1,335 ft. from S, 656 ft. from W, Sec. 81, Blk. 4, I.&G.N. Sur.	Drlg. 2,305 ft; top gas sand 2,190 ft.
Texhoma Nat. Gas Co.'s No. 2 Schaffer, center SE, Sec. 64, Blk. 4, I.&G.N. Sur.	Drlg. 2,620 ft; top gas sand 2,500 ft.
Texhoma Natural Gas Co.'s No. 3 Schaffer, center NW, Sec 63, Blk. 4, I.&G.N. Sur.	Rig on ground.
Texhoma Natural Gas Co.'s No. 1 Urbanczyk, center NE, Sec. 4, Blk. 4, I.&G.N. Sur.	Drlg. 705 ft.
CHILDRESS COUNTY	
C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.
COLLINGSWORTH COUNTY	
Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	S.D. 2,503 ft.
Downey et al's No. 1 Beasly, SE cor. SW SE, Sec. 95, Blk. 15, H.&G.N. Sur.	Rigged up.
DEAF SMITH COUNTY	
Western Union Oil Co.'s No. 1 Farwell, center NW, Sec. 15-2n-2e	Rigging up standard tools.
GRAY COUNTY	
Anderson et al's No. 2 Vollmert, 330 ft. N and W, SW, Sec. 140, Blk. 3, I.&G.N. Sur.	Standardizing 2,570 ft.
Back & Barber's No. 1 Back, 660 ft. from S and 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur.	S.D.
Boyce et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur.	Spudded and S.D.

(Continued on Page 85)

Oklahoma wells are flowing again Crude oil is plentiful and cheap

But that does not make straight run gasoline any better or any more salable

No matter how cheap crude oil is Dubbs cracking is the way to good gasoline and to profits

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Pipe Line Construction News

TEXAS PIPE LINE LAW ATTACKED IN COURT

HOUSTON, Tex., Nov. 16. — Three suits attacking validity of the common purchaser provisions of the last Texas state pipe line act, so far as the provisions apply to natural gas, have been filed in Federal Court here. Circuit Judge J. C. Hutcheson set down the suits which seek to enjoin enforcement of the provisions, for hearing here December 14 before a three-judge federal court.

The State Railroad Commission, Attorney General James V. Allred and Gov. Ross S. Sterling were named as defendants. No temporary and immediate relief was sought.

The plaintiffs are the Texhoma Natural Gas Co., the Cities Service Gas Co., the Panhandle Eastern Pipe Line Co. and the Texas-Interstate Pipe Line Co., the two latter having filed their action jointly.

The suits seek to have the provisions in question declared void and to restrain state officials from seeking to enforce them. Violation of due process constitutional clauses was alleged.

It is the first such attack on the new statute, which was passed at the special legislative session called last summer to give relief to the oil industry. The bill was known in the legislature as the Pollard pipe line bill. The petitioners alleged provisions of the act as applying to natural gas sought to force companies dealing in or carrying natural gas to purchase ratably whether or not they were common purchasers, or purchasers in any sense.

FURNACE OIL PIPE LINE

NEW YORK, Nov. 16.—A new application of pipe line distribution is planned for the South Shore district of Long Island, the South Shore Heating Co. having filed applications for permits to lay a pipe line system through the principal streets of Islip, Bay Shore, and Sayville for the distribution of furnace oil to consumers. The proposed line, construction of which will start in the spring, if permits are granted, is expected to be the nucleus for a pipe line system covering all towns along the Great South Bay.

John C. Robbins, formerly president of the Babylon, Long Island, Waterworks Co., is identified with the project.

RUMANIAN LINE POSTPONED

As part of Rumania's campaign to increase exports the government is reported planning the running of 20 long oil trains daily between the oil fields and Constanza on the Black Sea.

It is reported an oil monopoly may be created in which Royal Dutch would play a leading role. The crude production of this company jumped to the high figure of 380 cars per day for one week. Following an agreement between the minister of commerce and industry and the director general of railroads, it is said the idea of constructing a pipe line from the oil fields to Constanza has been given up, at least for the present.

TEXAS PIPE LINES

AUSTIN, Tex., Nov. 16.—Texas now has 25,000 miles of oil pipe lines, more than any other state, it was announced by R. D. Parker, chief of the oil and gas division, who said still more construction is in progress, principally in the East Texas Field. Although Texas has more railway mileage than any other state, the pipe line total exceeds the rail by about 7,000 miles. The Humble company holds the lead with more than 4,000 miles of pipe lines, while The Texas Company is second with 3,600 miles.

GAS LINES PROJECTED IN NEW YORK; HOLDING COMPANY BEING FORMED

By Special Correspondent

PITTSBURGH, Pa., Nov. 16. — The Standard Oil Co. (New Jersey) will be the dominating interest in the development of natural gas for New York State as a result of negotiations that have progressed sufficiently to give a broad general picture of the situation. Closely associated with Standard Oil of New Jersey are Columbia Gas & Electric Corp. and the Benedum-Trees interests of Pittsburgh.

A new holding company, known as Lycoming United Natural Gas Corp., is being organized under the laws of Delaware, capitalization yet undetermined, which will have as its chief subsidiary the Lycoming Natural Gas Corp., which company, in turn, has been in the forefront in the development of the new Tioga gas field in northern Pennsylvania.

Standard Oil Co. of New Jersey will own more than 50 per cent of the stock of Lycoming United Natural Gas Corp., Columbia Gas & Electric will own approximately 30 per cent and the Benedum-Trees interests approximately 20 per cent. Various properties of the latter two concerns are now being appraised and the producing units will become part of the property of Lycoming Natural Gas Corp. while compensation will be in the securities of the holding company.

Columbia Gas & Electric, along with various leases and wells, is turning in a 30 per cent interest in Belmont Quadrangle Corp. Benedum-Trees interests are turning in various producing properties in the gas fields. The new holding company, as a result, will control 1,500,000 acres of gas lands in Pennsylvania and New York.

As a result of an agreement with the Niagara Hudson Power Corp., Lycoming will supply gas to the Mohawk Hudson Power Corp., a Niagara Hudson subsidiary, at the city gate of Syracuse, N. Y., and nearby towns. A pipe line from the Tioga Field of Pennsylvania, work on which had been held up after it had reached the New York State line pending an agreement with Niagara Hudson, will be continued as rapidly as possible. An order for 20-inch pipe which had been given to the National Tube Co. has been released and pipe will be rushed for laying from the tube company's plant at Lorain, Ohio. The line will be owned by a Lycoming subsidiary known as the New York State Natural Gas Corp.

This line, along with another Lycoming line from the Wayne Field in New York State north to Pen Yan, N. Y., is all the work that will be done this year. It is expected, however, that by spring another Lycoming project will be so far advanced as to permit the starting of another gas line eastward to Albany, N. Y. The Pen Yan project, which ultimately will be extended, will be owned by a Lycoming subsidiary, Keuka Construction Corp.

The Lycoming line to Syracuse will make a connection with the Columbia Gas & Electric gas line which runs across southern New York from Olean to a point near Newark, N. J. Lycoming United will acquire an interest in the Home companies of Columbia Gas & Electric which own and operate this line.

Lycoming Natural Gas, through its own wells and purchase arrangements, has virtual control of the gas fields in the two states. The only important exception is the gas for the line of the Pennsylvania Power & Light Co., which runs from the Tioga Field to the Williamsport, Pa., region. Belmont Quadrangle, also, supplies gas through a line constructed by Iroquois Gas, subsidiary of National Fuel Gas, to the Wayne Field.

Open gas flow of Lycoming Natural Gas from its own wells in the Tioga region currently is 212,000,000 feet daily, while it also has contracts with others which have 185,000,000 feet daily. The open flow of the wells in the Wayne Field is estimated currently at 125,000,000 feet daily.

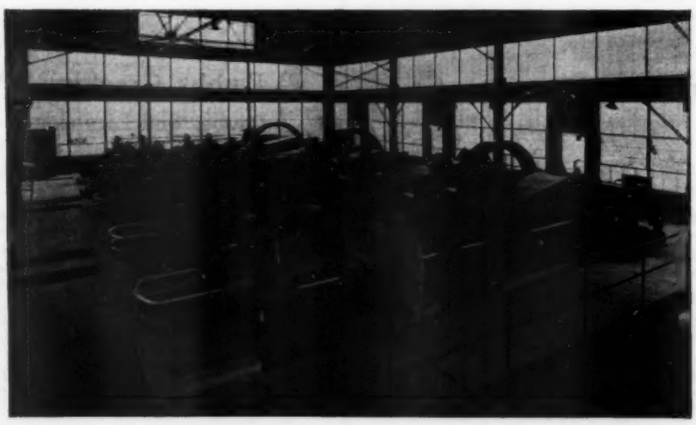
WESTERN GAS CO. LINE HAS HIGH PEAK CAPACITY

One of the principal reasons for the projection of the 290-mile extension from El Paso, Tex., to Cananea, Mexico, was the large immediate and potential market represented by copper mining and smelting companies. With the line completed and in operation, the industrial consumers in Douglas and Bisbee, Ariz., and Cananea, Mexico, are assured of a plentiful supply of natural gas from the Lea County fields of southeastern New Mexico. While the new line ordinarily delivers about 33,000,000 feet of gas daily, it has a capacity of 55,000,000 feet with the existing equipment. Further, each of the compressor stations can be enlarged to accommodate eight compressor units, instead of three. This flexibility in handling loads was made possible by the erection of two compressor stations on the El Paso Natural Gas Co.'s 16-inch line, and two stations on Western Gas Co.'s 12¾-inch extension. The line pipe, of course, has a very high yield point.

A total of 11 Cooper-Bessemer compressor units has been installed to date. There are three units at Station No. 1, which is located 72 miles from the gas field; three units at Station No. 2, which is 67 miles from the first; three units at Station No. 3, near Fort Bliss, Tex.; and two units at Station No. 4, near Gage, N. Mex. The normal working pressure of Stations No. 1 and 2 is 450 pounds (maximum being 500 pounds) and the capacity per 24 hours with a compression ratio of 2 is 21,900,000 feet. At the same compression ratio, the normal pressure of Stations No. 3 and 4 is 625 pounds (maximum being 750 pounds) and the daily capacity is 21,400,000 feet.

Bore and stroke of all the power cylinders is 19x24 inches. Bore and stroke of the compressor cylinders in the first two stations is 11x24 inches; while in the third and fourth stations it is 9½x24 inches. Though all the compressor units are rated 760 brake horsepower at 180 r.p.m., they are essentially the same in design as the 1,000-horsepower, twin-tandem, double-acting gas engines which direct-drive compressor cylinders in a number of the very large compressor stations.

The adequacy of service which this Texas-Mexico line offers to its customers is an important factor in stabilizing fuel costs and encouraging extended operations.



Three Cooper-Bessemer units rated 760 brake horsepower at 180 r.p.m. in Western Gas Co. compressor station near Fort Bliss, Tex.

LINE IS COMPLETED FOR GENERAL UTILITIES CO.

The Brown-Strauss Corp., Kansas City, Mo., has completed a 6-inch line for the receivers of General Utilities Co., with offices in the Grand Avenue Temple Building, Kansas City. This line, extending the Smithville, Mo., gas field to Liberty, Mo., a distance of 12 miles, will be used for transportation of gas to Liberty, where the franchise is owned by the General Utilities Co., as well as to supply farms and suburban developments along the route. An open flow of about 20,000,000 feet per day has been developed in the Smithville Field, principally by the Trees Oil Co. of Winfield, Kans.

Brown-Strauss, who furnished the pipe, installed the complete line by the Linde-weld process in 15 working days, including ditching and backfilling the entire distance.

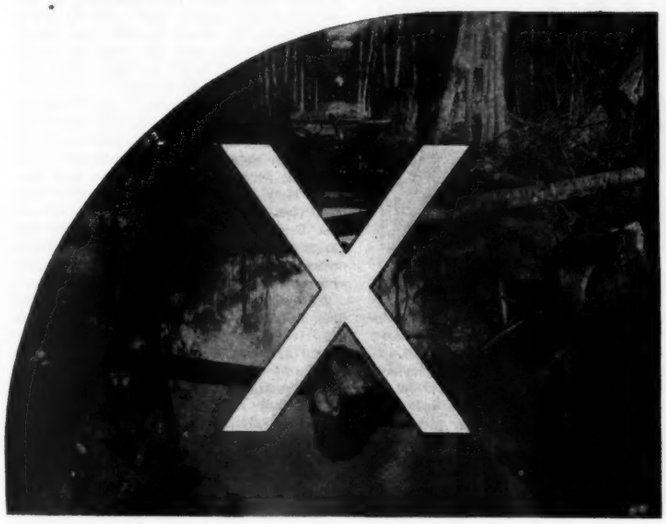
HUMBLE TO INCREASE EAST TEXAS CAPACITY

DALLAS, Tex., Nov. 16.—The Humble Pipe Line Co. is preparing to increase the capacity of its gathering lines in the Joiner and Kilgore areas, concurrently increasing the possible capacity of its two 10-inch lines from Longview Station in Gregg County to Moore Station in Louisiana. It is now laying a second 8-inch line from its station in the Joiner area to its Bateman Station west of Kilgore, this line connecting with its 8-inch which carried crude to the main station south of Longview.

This additional line will increase the daily outlet around 30,000 bbls. for the Humble company, which is transporting around 49,000 bbls. per day to Louisiana and 47,000 bbls. per day south to Todd Station, thence to Houston.

X—MARKS THE "HOT SPOT"

Where You Can SAVE MONEY With BYERS Wrought Iron



YOU cannot discredit the ability of a "hot spot" to worry a pipe-line superintendent. X marks the kind of spot—salt water drainage or alkali soil, gumbo or river crossing, gypsum area or cinder fill—where trouble breaks loose most frequently, causing tie-ups, expensive replacements and loss of hard-earned revenue.

What's the answer? With no ifs, ands or buts strung to it, you'll find the answer when you study the service histories of old pipe-lines. They reveal, simply, directly and convincingly, that genuine wrought iron has no satisfactory or economical equal for combating "hot spot" corrosion.

Standard of wrought iron quality since 1864, Byers Pipe today is the best wrought iron pipe ever produced. Modern manufacturing practices permit more accurate control of every step in production than ever before in wrought iron's history.

Call in a practical Byers oil country engineer. Make him show you some case histories—actual records of wrought iron service. Then draw your own conclusions! A. M. Byers Company, Pittsburgh, Pa. Established 1864.

BYERS GENUINE WROUGHT IRON PRODUCTS

BYERS GENUINE WROUGHT IRON PRODUCTS

Pipe	Casing	Couplings	Special Bending Pipe	Bar Iron
Tubing	Nipples	Welding Elbows	Plates and Sheets	Billets

AN INVESTMENT—NOT AN OUTLAY

WAREHOUSE STOCKS ARE PRACTICALLY DEPLETED

(Continued from Page 24)

to them while low prices prevailed and they have therefore been kept on production when in many instances they might better have been abandoned.

But under the new order of things wells that can no longer show profit in operation will be junked and many other economies put into practice that will result in actual increase in earnings of many companies in spite of low prices. It is reported by nearly all major companies that they have been able to reduce their lifting costs very materially and now that these facts have been established the executives are profiting by them and are instructing their production departments to consider economy of operations first.

Other economies have been put into practice that will be carried on in the future and will place the engineering and production departments upon a firmer basis and instead of devoting their efforts strictly to keeping wells producing and securing the final barrel of oil they will operate properties only so long as there is actual profit to be made by so doing. In other words, engineering will be based upon economics as well as good mechanical practice and this is a very decided step forward for the petroleum industry.

What has been said about the producing of old wells will also be applied to the drilling of new wells because if a company does not see where new wells will make profit there will be little tendency to order them put down. The wild scramble for production regardless of its actual value to the company getting it is a thing of the past and every department in the well organized oil companies will operate for profit only in the future.

Purchases Regulated

In the past there has been a great deal of promiscuous buying of various items of equipment sometime without approval by the purchasing departments and as a result many pieces of equipment have been left at the leases for trial and the company officials have known nothing of the transaction. The lease man may or may not have been capable of making a proper test of the apparatus but after a period the company has been billed for the material and if it has been used has been required to pay for it.

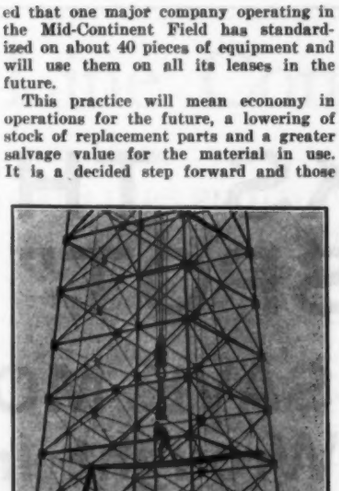
This practice has been looked down upon in the past by most purchasing departments but it has only been during the recent strict enforcement of economy that they have been able to put into effect rules which now require that all new equipment must first have the approval of a board of examiners made up of the heads of several departments and purchase order issued before it can be taken out for trial installation.

This innovation is really of benefit to the manufacturers for if they have items of merit no one is more anxious to know about them than the producing companies. The sales engineer for the manufacturer has ample opportunity to submit his proposition to the committee and discuss it fully. During these discussions it may be found that slight changes may be made that will actually improve the piece of equipment and make it more suitable for the company's requirements.

When the test article is sent out for trial full record is made of the installation and engineers and others are instructed to keep complete records of its performance and make reports periodically on the progress of the test. At the end of the specified time the trial is closed and the manufacturer's representative is called into consultation with the production company's board of examiners and the results frankly discussed. It may be that the item can be adapted as sent out or it may be that changes will be required but in any event every one interested is working toward the same end and mutual satisfaction is assured.

During the period of lowered operations many companies have taken the opportunity to make numerous tests of equipment and material and it is reported that one major company operating in the Mid-Continent Field has standardized on about 40 pieces of equipment and will use them on all its leases in the future.

This practice will mean economy in operations for the future, a lowering of stock of replacement parts and a greater salvage value for the material in use. It is a decided step forward and those



Running 4-inch tubing in well of Skelly Oil Co.'s Hoopes lease, Oklahoma City Field.

manufacturers who have been alive to their opportunities have made the most of this dull period to prepare for an increased volume of business for the future.

Companies operating in many fields have found that some small manufacturers and individuals having new pieces of equipment they desired to introduce into the oil country have gone to leases and asked for trials and left the articles to be tried out with the lease men. The company department heads were not always notified of the tests being conducted and in a number of cases the piece of apparatus has proved totally unsuited for the use for which it was intended.

Not satisfied with having been turned down upon a lease, say in Kansas, these men have moved on into Oklahoma, or perhaps Arkansas, and again asked for and received permission from lease men to try out the same piece of equipment and as a result the oil company has been put to the expense of making several tests when it was quite clearly demonstrated by the first one that the article in question was not suited to the company's needs.

Under the new order of things such promiscuous testing of equipment cannot be carried on and once a trial is authorized for any field a full and complete record of that test is sent to the company's home office as well as to all division headquarters and in this way duplicate tests will not be necessary or possible.

Revival Will Be Conservative

Now that prices for oil have been materially increased men are being put back to work in all fields and wells are being produced in accordance with the allowables set for them by the departments of the various states handling those details.

There are two conditions, however, that will govern to a large extent the rapidity of recovery in the production department of the industry, and they are the physical condition of the men and the mechanical condition of the machinery.

Few who have not been in actual contact with the conditions in the oil fields will realize the havoc that has been wrought among the oil field workers by enforced idleness during the shut-down periods. Many men have been out of employment for months and have, in many cases, been on short rations and consequently they are now far from physically fit to "hit the ball" as they did when working and eating regularly.

Field superintendents and foremen fully realize these conditions and are taking them into consideration when rehiring the men and instructions are given to gang pushers to go easy on the men until they are again hardened up. This condition will require some time to adjust for as new men are added to the gangs they will to some extent slow down operations until they are individually able to hold up their end of the work.

Likewise equipment on the leases has been patched and repaired so many times that it cannot be run to full capacity. Wells are therefore being pumped carefully and repairs and replacements being made constantly to bring the equipment up to full load capacity. During the period of idleness belts have deteriorated and have been spliced and patched until they are now in such condition that they cannot operate under full load conditions. Where belting replacements have been made 95 or 165-foot lengths have been sent to the lease where needed and the purchasing has been done in that way, but with increased demands for oil it will be necessary to buy belting in rolls, and in some cases in carloads, to recondition properties and put them in first-class condition.

Engines have been robbed of brass parts in all fields while they were idle and these stolen parts must be replaced. Main bearing bushings made of brass have been stolen and sold to junk dealers for a few dollars and to replace them will cost, in many cases, as much as $80 per engine plus labor costs. Little pieces of brass stems have been removed along with small stuffing glands from valves and this will necessitate their replacement at considerable cost of material and labor. In fact all kinds of brass parts have been stolen.

Just now all production companies are busy checking up on these numerous small items needed to put their wells back on production and as time goes on they will gradually buy new equipment for many of the properties because the old machinery cannot stand full load duty.

This is going to mean a lot of new business for manufacturers and supply companies and in a great many cases they have allowed their stocks, both in the distributing warehouses and at the factories, to run down to next to nothing. They must make surveys of conditions quickly to learn what their customers will need and in many cases start purchasing of raw material with which to make the needed material so that they will be in position to serve their customers promptly as the orders come through.

Salesmen and representatives for manufacturers and supply companies should be again put to work calling upon the trade to learn of the requirements of the various operators and get themselves into position to serve them promptly or much business will be lost or the customers inconvenienced by not being able to get supplies quickly.

Equipment Stocks at a Minimum

A recent survey of the situation in Tulsa, Oklahoma City, Dallas, and Houston, Tex., indicates that all companies have a considerable amount of cash on hand. This has been accumulated by good operating and the practice of strict economy. Also by liquidating stocks of crude oil in storage.

Having money available and finding that the stocks of crude oil on hand are decreasing it is only natural to assume that the next move will be to start some new drilling operations. As a matter of fact such operations have been started in many fields and in many ways.

Old wells have been cleaned out, and some of them deepened. Inside locations have been drilled and there are a few first locations reported in what may be considered wildcat territory.

As the winter advances and the yearly inventories are completed and the executives have opportunity to digest just what has taken place during the year 1931 it is almost certain that they are going to open up the purse strings and start a lot of new work for the spring of 1932.

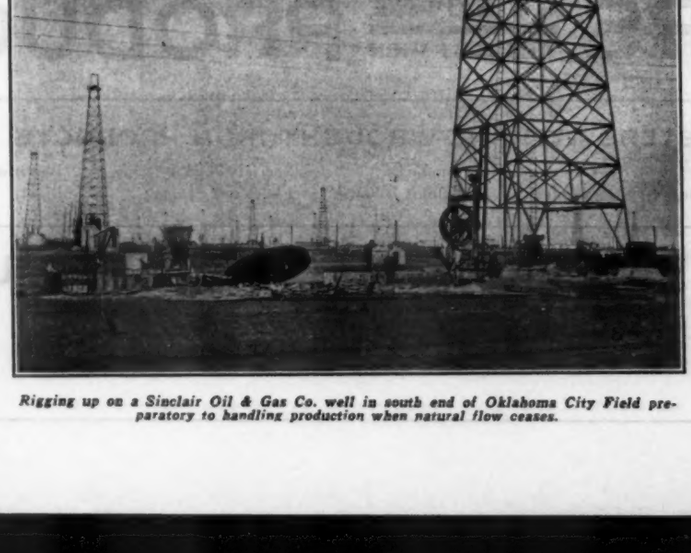
As the buying has been very slow it has been only natural for the supply houses and manufacturers to limit their actual stocks in the fields to a minimum, and more unfortunately to reduce their sales forces to below minimum. During the period when salesmen and sales engineers could have had access to everyone in the production company's organization and have ample time to have set forth the merits of their particular line of goods the manufacturers have laid off those men.

Shops Must Open, Stocks Be Replenished

To illustrated how low the present stocks of all commodities are at this time in the oil country two typical cases are cited. A purchaser for one of the major companies in Tulsa recently placed an order for a carload of new sucker rods. The manufacturer could only supply a part of this order from stock and actually had to order in new raw material with which to complete the order. And this purchaser advises that he will have to buy another carload of rods within 30 days and he is somewhat concerned as to where he will be able to secure it for prompt delivery.

Orders were placed for 13 drilling lines by three companies and the wire line manufacturer's stock was stripped bare and it was necessary for him to order from the plant and there again they found that they did not have on hand raw material with which to make up new wire lines promptly.

Belting has been used to its ultimate limit and it has been found in one company that the field men had switched belts from one well to another with the hope that it would permit them to keep the wells running without buying new



Rigging up on a Sinclair Oil & Gas Co. well in south end of Oklahoma City Field preparatory to handling production when natural flow ceases.

material. This was contrary to the wishes of the engineers in charge of those operations but 90 belts were so moved before the changes where detected and now it is going to be necessary to buy a lot of new belts immediately to keep the properties in operation.

The East Texas drilling campaign has demanded the removal of every kind of equipment in vast quantities into that territory. One company has cleaned up every old lease they had in all parts of Texas, Arkansas and Louisiana and shipped over 1,000 carloads of material into East Texas. They are now through and any new work will have to be done with new materials.

In a review of the situation in The Oil and Gas Journal of September 10 and 17 the writer attempted to show the present condition of the industry and the amount of oil that may be expected from the various areas in this country under operations controlled by the movement of water in the structures. Since that time a recheck of those facts has been made with the engineers in charge of operations in each of the several pools and the statements confirmed and in some cases they seem to have been too conservative.

The oil company executives have been taking stock of conditions within their own companies and as they have been practicing strict economy find they do have money on hand, but a declining supply of oil and a drilling campaign under way that is negligible in its importance.

AUTOMATIC STATIONS SHOW IMPROVEMENTS

(Continued from Page 17)

master control panel, it is assumed that the automatic pump station is shut down, and that oil is being pumped past the station, through the main line. The signal lights indicate all valves "closed," all motor-pump units "stop," and with electric power "on." As it is necessary to increase the volume of oil to be delivered through the pipe line, the automatic station is started. If motor-pump unit No. 1 is to be used, the switch directly above this unit on the panel is turned so it will point toward "run" instead of toward "stop." When this switch is turned as above, a set of signals is dispatched over the master control system to the automatic station, which will operate relays, and cause motor-driven valves "1" and "2" to open simultaneously. When these valves are fully open the red lights above the valves on the control panel are turned off, and the green lights are turned on. Also, when these valves are fully open, the motor of motor-pump unit No. 1 is automatically started, and this operation is indicated at the central control point by the red light above the unit being turned off and the green light turned on. Thus the attendant at the control point knows that motor-pump unit No. 1 is operating under normal conditions.

Similarly motor-pump units Nos. 2 and 3 may be started—any one of these units, or all three of them, and the return signals will inform the attendant that the operations have been completed.

To stop motor-pump unit No. 1, it is merely necessary to turn the control switch above the unit, so it will point in the direction of "stop." Signals are sent to the automatic station, which will cause motor-driven valves 1 and 2 to close simultaneously. When these valves start to close, motor 1 is stopped instantly, and when the operations are completed, the operator is informed by the changing lights on the control panel. Motor-pump units 2 and 3 may be stopped in a similar manner.

Automatic Stop

If a bearing on one of the units should become excessively hot, the red light directly above the unit is turned on, as well as the "stop" light, indicating that the unit has been automatically stopped. This unit cannot be re-started until a repair man has corrected the trouble and reset certain relays at the automatic station.

Should an oil leak occur within the automatic station, due to a broken gasket or excess flow through the stuffing boxes, more oil would be received into the sump than the pump could handle, and the oil would reach an excessively hight level. When this condition obtains, an electric contact is closed in a control unit, which stops all main motor-pump units, closes all valves in the automatic station and sends signals over the master control system which lights the red light over the sump on the control panel. The attendant at the central control point is thus informed as to the cause of the station's shutdown.

If the voltage of the batteries at the automatic station, which are used in the master control signaling system, becomes excessively low, a signal is sent to the central control point which will turn on the red light over the battery on the control panel. The attendant dispatches a repair man to the automatic station to correct the trouble, before the signaling system becomes inoperative.

Should the source of power for the automatic station fail, the lights above the "electric power" switch on the control panel would change from green to red. When power is restored, these lights would change back from red to green. The motor-pump units in the automatic station which had been running would, of course, stop on failure of power. However, they cannot automatically re-start upon restoration of power but must be started by the attendant at the central control point, by means of the control switches.

Testing System

In order to determine that the control and signaling system is operating, each attendant at the central control point, when coming on tour, operates the control switch of the test circuit. By turning the switch in the direction of the red lights, signals are sent to the automatic station which operates relays, sending signals back to the central control point which causes the green light to turn off and the red light to turn on. Then, when the switch is turned in the direction of the green light, signals are sent which will cause the red light to turn off and the green light to turn on.

The master control system just described is so designed that any number of stations may be controlled, and signals received from them, over the same two telephone wires. A complete pipe line system may be controlled from one central point, regardless of its length.

Three years of research and experimentation have resulted in a fully automatic pipe line pumping station which is a complete commercial success. All operations of the automatic control system are being performed without failure, and the functions of the master control system are practically infallible.

Commercial Advantages

The commercial advantages of the automatic pipe line pumping system just described may be summarized as:

1. Reduced cost per barrel of fluid pumped, because of elimination of all labor at the stations.
2. Reduced initial cost of the stations, due to the simplified pumping equipments, elimination of cottages or living quarters for attendants.
3. Complete control of entire pipe line system from one central point. Thus the dispatcher at this control point may start or stop pumps, open or close motor-driven valves, etc., as required for the operating conditions of the system. He is in complete control of all operations at each station, and is immediately notified if any contingency should arise.

In this day of severe competition, reduced operating costs and increased efficiency are essential to the advancement of any large organization. Because of the possibilities of accomplishing these economic results with the fully automatic pipe line pumping stations, considerable interest has been shown by executives of the large pipe line companies in the development of the automatic systems described in this article. Due to this interest on the part of the oil companies and the wonderful results which have thus far been attained, it is safe to predict that many large pipe line systems of the future will be equipped with fully automatic pumping stations.

PENNSYLVANIA GASOLINE TAX SAVING MILLIONS

(Continued from Page 16)

penses of the Liquid Fuels Tax Bureau were $20,400 less than in the August preceding, and further reductions in cost are at hand as the old mess gets cleared up.

Bureau of Liquid Fuels Tax

The Bureau of Liquid Fuels Tax is the connecting link between the distributor and the Department of Revenue. Working with it is a delinquent tax collection unit with eight centrally located branches throughout the state. The function of that unit is to facilitate the collection of delinquent taxes as determined by the auditing unit.

The auditing unit verifies the distributors' reports, as they are received each month, by comparing them with the reports filed monthly by the various railroad companies, or other common carriers, and with the reports of sales by the distributors from whom they buy. Under the present law all common carriers must furnish monthly reports to the Department of Revenue of all gasoline moved, either coming into Pennsylvania or from one point to another in Pennsylvania. By requiring common carriers to make these reports, the gasoline bootlegger has been deprived of one of his principal methods of tax evasion.

Within the bureau is a field auditing unit. It is the business of that unit to see that an auditor visits each distributor frequently and to make a complete investigation of all records.

Revenue Border Patrol

Much of our success in curbing the flow of bootleg gasoline into Pennsylvania followed the creation of a revenue border patrol of 40 men. This patrol operates on land and water. The land unit patrols the various highways leading from states bordering on Pennsylvania. The water unit patrols the Delaware and Schuylkill Rivers. The one checks all gasoline entering Pennsylvania in trucks. The latter checks all gasoline coming into the state in barges. The moral effect has been splendid. Running gasoline into Pennsylvania by land or water is becoming an unprofitable business.

For the United States as a whole about 1,000,000,000 gallons of gasoline out of 15,000,000,000 gallons used have escaped taxes annually. This huge racket can be routed if the states will take rotten politics out of tax enforcement, spend adequate money for auditors, and use adequate inspection methods.

Because gasoline bootlegging has lacked the gun play and the sordid dramatics of the other form of bootlegging, it has failed to attract general public attention in most states. The people of Pennsylvania, however, no longer look upon it with complacency. They think of it now in terms of dollars and cents stolen from them in miles of needed highways which the bootlegger withheld from them.

More Co-operation Needed

Better co-operation between the gasoline tax collecting agencies of the various states will do much to hamper this form of tax evasion. It will help the state treasury and the state treasury of your neighboring states. Co-operation between states and reputable distributors is necessary. In Pennsylvania we are receiving this co-operation from all the worthwhile men in the oil industry. Without this co-operation, we could not have succeeded at all to the extent we have.

The states have the duty of protecting legitimate dealers from this type of fraudulent competition. Such competition is destructive alike of good business practices and of good morale on the part of taxpayers. It is ethically indecent for any state to so administer a tax as to bring outrageous business practices into existence, and then to encourage them.

NATURAL GAS ENGINEERS TOUR OKLAHOMA-KANSAS

Dr. Eugene A. Stephenson, professor of Petroleum Engineering at Missouri School of Mines, Rolla, Mo., together with G. H. Krell, L. F. Pummill, W. F. Stephenson, C. J. Wenger and H. B. Wyrick, students in natural gas engineering, made a trip through the gas fields of Oklahoma and Kansas, leaving Rolla on October 28.

The first stop was made at Independence, Kans., where C. W. Studt and several of his assistants with the Union Gas Corp. showed the party their methods of gauging gas wells and checking lines for leakage.

The next day James Hatfield of the Indian Territory Illuminating Oil Co., Bartlesville, Okla., conducted the group through a portion of the eastern Osage gas area and gave practical demonstrations of gauging gas wells by means of open flow, minute pressure, and critical flow test methods, also instructions in measuring gas, connecting up gas wells and developing the fundamental characteristics which apply in the mathematical study of gas wells. They were accompanied by Pat McDonald, a former student of the School of Mines at Rolla.

Staurday, October 31, was spent at the U. S. Bureau of Mines Petroleum Experiment Station at Bartlesville, Okla., studying various types of research work on both gas and oil. The party later visited the Oklahoma City oil field.

A similar trip will be made next spring by students in the oil production engineering course.

Interior view of automatic pipe line pumping station of a large company in Oklahoma.

CO-OPERATE IN OPERATIONS

NEW YORK, Nov. 16.—Gewerkschaft Florentine, a subsidiary of the German Preussag organization, and Anglo Foreign Oil & General Trust, Ltd., of London, have signed an agreement for the joint development of the properties held by the two companies in the Eddesse district of Hanover. Approximately 2,000 acres of oil lands are involved.

Report of A. P. I. Committee on Supply and Demand

The board of directors of the American Petroleum Institute approved the report of the committee of the institute on refinery statistics and economics. The tenor of that report was covered in the November 12 issue of The Oil and Gas Journal. Tables included in the report follow.

NINE MONTHS' PERIOD—OCTOBER 1, 1931-JULY 1, 1932 (ESTIMATED)

REFINERY GASOLINE

(Barrels of 42 Gallons)

	Nine months' period 1931-1932 (est.) total	Nine months' period 1930-1931 total	Increase or decrease—Total	Increase or decrease—Pct.
Demand:				
Domestic	289,700,000	281,856,000	+ 7,844,000	+ 2.8
Export	30,500,000	36,038,000	— 5,538,000	—15.4
Total demand	320,200,000	317,894,000	+ 2,306,000	+ 0.7
Supply:				
From straightrun	*155,170,000	157,546,000	— 2,376,000	— 1.5
From cracked	136,500,000	125,234,000	+11,266,000	+ 9.0
From natural	23,300,000	29,289,000	— 5,989,000	—20.4
Total output	314,970,000	312,069,000	+ 2,901,000	+ 0.9
From imports	9,500,000	10,696,000	— 1,196,000	—11.2
Total supply	324,470,000	322,765,000	+ 1,705,000	+ 0.5
Change in stocks	+4,270,000	+4,871,000	.....	.....
Stocks:				
October 1	33,330,000	38,182,000	— 4,852,000	—12.7
January 1	36,040,000	40,529,000	— 4,489,000	—11.1
April 1	43,000,000	47,773,000	— 4,773,000	—10.0
July 1	37,600,000	43,053,000	— 5,453,000	—12.7
Addition 10/1-4/1	9,670,000	9,591,000	.....	.....
Withdrawal 4/1-7/1	5,400,000	4,720,000	.....	.....

REQUIREMENTS OF DOMESTIC CRUDE OIL—BY MONTHS

Month:	Total barrels	Average per day
October	76,400,000	2,462,000
November	69,600,000	2,319,000
December	67,275,000	2,172,000
January	65,575,000	2,117,000
February	61,040,000	2,107,000
March	64,600,000	2,084,000
April	70,600,000	2,355,000
May	76,410,000	2,463,000
June	77,800,000	2,593,000
Total and daily average nine months' period	629,300,000	2,297,000

*Balance necessary. †Based on 33.5 per cent recovery from 512,600,000 bbls. of estimated crude runs. ‡Excludes heavy crude and fuel in California.

GAS AND FUEL OIL—EAST OF CALIFORNIA

(California not shown due to abundance of stocks)

Demand:				
Domestic	195,000,000	204,488,000	— 9,488,000	— 4.6
Exports	7,700,000	7,916,000	— 216,000	— 2.7
Total demand	202,700,000	212,404,000	— 9,704,000	— 4.6
Supply:				
From refining output	†171,720,000	190,072,000	—18,352,000	— 9.7
From California	1,300,000	2,437,000	— 1,137,000	—46.7
From imports	17,500,000	18,340,000	— 840,000	— 4.6
Total supply	190,520,000	210,849,000	—20,329,000	— 9.6
Change in stocks	—12,180,000	—1,555,000	.....	.....
Stocks:				
October 1	40,450,000	35,820,000	+ 4,630,000	+12.9
April 1	23,900,000	27,855,000	— 3,955,000	—14.2
July 1	28,270,000	34,265,000	— 5,995,000	—17.5
Withdrawal 10/1-4/1	16,550,000	7,965,000	.....	.....
Addition 4/1-7/1	4,370,000	6,410,000	.....	.....

CRUDE OIL

Demand:				
Runs to stills:				
East of California	512,600,000	520,718,000	— 8,118,000	— 1.6
California	110,900,000	133,524,000	—22,624,000	—16.9
Total runs	623,500,000	654,242,000	—30,742,000	— 4.7
Exports	18,000,000	17,124,000	+ 876,000	+ 5.1
Used as such	20,000,000	21,076,000	— 1,076,000	— 5.1
Total demand	661,500,000	692,442,000	—30,942,000	— 4.5
Supply:				
From U. S. production	629,300,000	629,236,000	—23,378,000	— 3.7
From stocks	.....	23,442,000	.....	.....
From imports	32,200,000	39,764,000	— 7,564,000	—19.0
Total supply	661,500,000	692,442,000	—30,942,000	— 4.5
Stocks:‡				
October 1	369,504,000	417,195,000	—47,691,000	—11.4
July 1	.....	393,753,000	.....	.....
Withdrawal 10/1-7/1	.....	23,442,000	.....	.....

ESTIMATES OF SUPPLY AND DEMAND OF REFINERY GASOLINE BY MONTHS—NINE MONTHS' PERIOD—OCTOBER 1, 1931-JULY 1, 1932

	October	November	December	January	February	March	April	May	June	Ttl. 9 mos.
Demand:										
Domestic	31,900,000	30,900,000	29,900,000	27,200,000	27,200,000	30,700,000	34,000,000	36,600,000	39,200,000	289,700,000
Export	3,600,000	3,400,000	3,500,000	3,300,000	2,900,000	3,300,000	3,400,000	3,600,000	3,500,000	30,500,000
Total	37,500,000	34,300,000	33,400,000	30,500,000	30,100,000	34,000,000	37,400,000	40,200,000	42,700,000	320,200,000
Supply:										
Straightrun	18,530,000	16,750,000	16,180,000	16,180,000	15,130,000	16,200,000	17,720,000	19,110,000	19,370,000	155,170,000
Cracked	15,560,000	14,660,000	14,960,000	14,460,000	13,960,000	14,760,000	15,760,000	16,680,000	15,700,000	136,500,000
Natural	2,640,000	2,640,000	2,690,000	2,640,000	2,490,000	2,640,000	2,490,000	2,570,000	2,500,000	23,300,000
Total refinery output	36,730,000	34,050,000	33,830,000	33,280,000	31,580,000	33,600,000	35,970,000	38,360,000	37,570,000	314,970,000
Imports	1,200,000	1,100,000	1,000,000	1,000,000	1,000,000	1,200,000	1,100,000	1,000,000	900,000	9,500,000
Total supply	37,930,000	35,150,000	34,830,000	34,280,000	32,580,000	34,800,000	37,070,000	39,360,000	38,470,000	324,470,000
To or from storage	+430,000	+850,000	+1,430,000	+3,680,000	+2,480,000	+800,000	—330,000	—840,000	—4,230,000	+4,270,000
Stocks:										
First of month	33,330,000	33,760,000	34,610,000	36,040,000	39,720,000	42,200,000	43,000,000	42,670,000	41,830,000	
End of month	33,760,000	34,610,000	36,040,000	39,720,000	42,200,000	43,000,000	42,670,000	41,830,000	37,600,000	
Yield from crude:										
Crude runs required	75,000,000	67,800,000	65,490,000	65,490,000	61,240,000	65,570,000	70,300,000	75,810,000	76,800,000	623,500,000
Daily average	2,419,000	2,260,000	2,113,000	2,113,000	2,113,000	2,113,000	2,343,000	2,445,000	2,560,000	2,276,000
Straightrun yield, pct.	24.7	24.7	24.7	24.7	24.7	24.7	25.2	25.2	25.2	24.9

ESTIMATES OF REFINERY GASOLINE, CRUDE AND YIELDS—BY DISTRICTS—NINE MONTHS PERIOD—OCTOBER 1, 1931-JULY 1, 1932

(Barrels of 42 U. S. Gallons)

	East Coast	Appalachian	Indiana, Illinois	Oklahoma, Kansas	Inland Texas	Texas Gulf	Louisiana Gulf	North La. and Ark.	Rocky Mountain	Californ'a	Total all districts
Demand:											
Domestic and export	58,500,000	12,800,000	45,500,000	45,500,000	22,700,000	56,500,000	13,900,000	6,500,000	9,300,000	49,000,000	320,200,000
Supply:											
From straightrun	23,603,000	7,056,000	20,940,000	24,030,000	12,216,000	24,303,000	5,624,000	3,031,000	4,755,000	29,612,000	155,170,000
From cracked	27,400,000	5,200,000	23,200,000	18,000,000	7,000,000	28,500,000	7,700,000	2,700,000	4,000,000	12,800,000	136,500,000
From natural	600,000	350,000	2,000,000	3,700,000	2,500,000	4,950,000	900,000	700,000	800,000	6,800,000	23,300,000
Total refining output	51,603,000	12,606,000	46,140,000	45,730,000	21,716,000	57,753,000	14,224,000	6,431,000	9,555,000	49,212,000	314,970,000
From imports	9,000,000	.....	.....	.....	.....	.....	500,000	.....	.....	.....	9,500,000
Total supply	60,603,000	12,606,000	46,140,000	45,730,000	21,716,000	57,753,000	14,724,000	6,431,000	9,555,000	49,212,000	324,470,000
To or from storage	+2,103,000	—194,000	+640,000	+230,000	—984,000	+1,253,000	+824,000	—69,000	+255,000	+212,000	+4,270,000
Stocks:											
October 1, 1931	3,897,000	1,394,000	4,685,000	2,920,000	2,084,000	3,547,000	626,000	244,000	1,395,000	12,538,000	33,330,000
January 1, 1932	4,235,000	1,390,000	5,015,000	3,390,000	1,790,000	4,515,000	730,000	235,000	1,340,000	13,400,000	36,040,000
April 1, 1932	6,956,000	1,390,000	6,300,000	3,860,000	1,260,000	5,630,000	1,710,000	200,000	1,850,000	13,500,000	43,000,000
July 1, 1932	6,000,000	1,200,000	5,325,000	3,150,000	1,100,000	4,800,000	1,450,000	175,000	1,650,000	12,750,000	37,600,000
Total crude runs*	123,550,000	24,750,000	75,300,000	75,100,000	37,090,000	118,500,000	29,600,000	13,200,000	15,600,000	110,900,000	623,500,000
Crude runs per day	451,000	90,000	275,000	274,000	135,000	433,000	108,000	48,000	57,000	405,000	2,276,000
Yields from crude:											
Straightrun, per cent	19.1	28.5	27.8	32.0	33.0	20.5	19.0	23.0	30.5	26.7	24.9

*Amount necessary to produce straightrun gasoline required.

ESTIMATED SHIPMENTS OF GASOLINE FROM REFINERIES BY DISTRICTS BY MONTHS—NINE MONTHS' PERIOD OCTOBER 1, 1931-JULY 1, 1932

(Barrels of 42 U. S. Gallons)

Month and year—	East Coast	Appalachian	Indiana, Illinois	Oklahoma, Kansas	Inland Texas	Texas Gulf	Louisiana Gulf	North La. and Ark.	Rocky Mountain	California	Total all districts—Monthly	Total all districts—Daily
October, 1931	5,550,000	1,500,000	5,520,000	5,400,000	2,560,000	6,120,000	1,730,000	700,000	1,270,000	*5,900,000	36,300,000	1,171,000
November, 1931	5,320,000	1,270,000	4,890,000	5,070,000	2,300,000	6,050,000	1,400,000	680,000	1,010,000	5,210,000	33,200,000	1,107,000
December, 1931	5,680,000	1,200,000	4,740,000	4,700,000	2,450,000	5,900,000	1,400,000	640,000	760,000	4,930,000	32,400,000	1,045,000
January, 1932	4,500,000	1,080,000	4,000,000	4,340,000	2,350,000	5,800,000	1,200,000	620,000	700,000	5,010,000	29,600,000	955,000
February, 1932	4,480,000	1,070,000	3,910,000	4,070,000	2,150,000	6,040,000	1,260,000	610,000	840,000	4,670,000	29,100,000	1,003,000
March, 1932	4,910,000	1,380,000	4,260,000	4,720,000	2,610,000	6,250,000	1,400,000	730,000	1,070,000	5,470,000	32,800,000	1,058,000
April, 1932	5,630,000	1,620,000	5,360,000	5,270,000	2,610,000	6,500,000	1,500,000	800,000	1,150,000	5,860,000	36,300,000	1,210,000
May, 1932	6,510,000	1,840,000	6,010,000	5,570,000	2,750,000	6,800,000	1,700,000	830,000	1,220,000	5,970,000	39,200,000	1,265,000
June, 1932	6,920,000	1,840,000	6,810,000	6,360,000	2,920,000	7,040,000	1,760,000	890,000	1,280,000	5,980,000	41,800,000	1,393,000
Total	49,500,000	12,800,000	45,500,000	45,500,000	22,700,000	56,500,000	13,400,000	6,500,000	9,300,000	49,000,000	310,700,000	1,134,000
Daily average	180,000	47,000	166,000	166,000	83,000	206,000	49,000	24,000	34,000	179,000	1,134,000	

INDICATED COURSE OF STOCKS OF REFINERY GASOLINE FROM OCTOBER 1, 1931 (Actual) TO JUNE 30, 1932 (Economic)

Month and year—	East Coast	Appalachian	Indiana, Illinois	Oklahoma Kansas	Inland Texas	Texas Gulf	Louisiana Gulf	North La. and Ark.	Rocky Mountain	*California	Total all districts
October 1, 1931	3,897,000	1,394,000	4,685,000	2,920,000	2,084,000	3,547,000	626,000	244,000	1,395,000	*12,538,000	33,330,000
October 31, 1931	4,100,000	1,394,000	4,580,000	3,000,000	2,000,000	3,786,000	670,000	250,000	1,230,000	*12,750,000	33,760,000
November 30, 1931	4,275,000	1,394,000	4,600,000	3,031,000	1,900,000	4,090,000	710,000	240,000	1,070,000	*13,250,000	34,610,000
December 31, 1931	4,400,000	1,390,000	4,900,000	3,200,000	1,800,000	4,490,000	930,000	230,000	1,360,000	*13,400,000	36,040,000
January 31, 1932	5,400,000	1,390,000	5,640,000	3,550,000	1,750,000	5,210,000	1,405,000	225,000	1,600,000	*13,550,000	39,720,000
February 29, 1932	6,200,000	1,390,000	6,050,000	3,830,000	1,625,000	5,590,000	1,655,000	210,000	1,800,000	*13,850,000	42,200,000
March 31, 1932	6,950,000	1,390,000	6,300,000	3,860,000	1,260,000	5,630,000	1,710,000	200,000	1,850,000	*13,850,000	43,000,000
April 30, 1932	6,950,000	1,390,000	6,300,000	3,880,000	1,260,000	5,630,000	1,710,000	200,000	1,850,000	*13,500,000	42,670,000
May 31, 1932	6,870,000	1,340,000	6,215,000	3,800,000	1,250,000	5,545,000	1,685,000	195,000	1,830,000	*13,100,000	41,830,000
June 30, 1932	6,000,000	1,200,000	5,325,000	3,150,000	1,100,000	4,800,000	1,450,000	175,000	1,650,000	*12,750,000	37,600,000

*In all the refining districts indicated except California, figures in these coulmns represent gasoline stocks at refineries. In California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States (stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

Potentials Decline at Oklahoma City

Late Tests Show Some Estimates Were Too High. State Produces Close to Allowable. Trading in Old Properties

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's estimated daily production for the week ending November 14 was approximately 543,210 bbls. a day which is within 3,000 bbls. of the State's allowable of 546,000 bbls. for the first time since martial law was lifted in October. The production represents an increase of approximately 9,000 bbls. a day over the previous week. The increase in the state's production is mostly from the Greater Seminole area where new potential gauges are being taken.

Since the Corporation Commission issued orders zoning the Oklahoma City Field and increased the allowable of the wells making water, the committee in charge of the potentials in the field have been busy checking the adjusted allowables on wells producing from the Arbuckle and lower Simpson sand zones. The order stated that wells making more than 3 per cent water will be given marginal flows and an increase in their allowables. Potentials on the water wells in the field are expected to be completed within another week and the reclassification of the wells will take only a little while longer. It is expected by December 1 the true status of the water wells in the field will be established.

During the week the reports from the Greater Seminole area indicated that some of the semiflush areas would not make their estimated potentials and the difference in the amount of production would be allotted to the Oklahoma City Field. It was estimated by some that the difference would amount to approximately 20,000 bbls. a day, which would permit the Oklahoma City Field a daily potential of 200,000 bbls. a day.

The Oklahoma City Field still has a large underproduction and on November 1 it was 4,393,068 bbls., while the overproduction totaled 1,594,656 bbls., making the net underproduction 2,798,412 bbls. On October 1, the potential of the Oklahoma City Field fixed by the Corporation Commission was 3,375,091 bbls. in one day from 813 wells.

Celebrate an Anniversary

The discovery well in the Oklahoma City Field was completed on December 4, 1928, and since that time 844 wells have been completed in the field. The third anniversary will be marked with a special program by the operators in the field. Plans for a tour of the field starting at the extreme southwest corner and proceeding north past the discovery well, the Indian Territory Illuminating Oil Co.'s No. 1 Fee, C SE SE, Section 24-11-3w, are under way. The tour is designated to include visits to the gasoline plants, refineries, loading racks, lease camps and a part of the river bed and town lot areas.

Ask for New Umpire

During the week a petition was being circulated among the Oklahoma City operators asking for the removal of the present proration committee. A "disinterested party" is desired as umpire in the field, the petition states.

The present committee is composed of W. N. Stokes, an attorney for the Tom Slick estate and chairman of the operators committee; C. O. Rison, of the Indian Territory Illuminating Oil Co.; and B. G. Patton, of the Plains Petroleum Co. Following the hearing late last month the Corporation Commission named the committee to operate. Otto Bradford, umpire from the start of proration in the Oklahoma City Field, resigned last month and since that time the affairs of the umpire's office have been handled by the committee and Lieut. Col. Cicero I. Murray, in charge of the military forces.

During the week the pipe line companies have been making an effort to keep the storage tanks in the Oklahoma City Field empty, notwithstanding the large daily production, due to the taking of potential tests. It is believed there is very little crude oil in field storage as the pipe line companies are aiding in the taking of potential tests and are drawing on stocks to meet the market demands.

During the first 10 days of the month the Stanolind Crude Oil Purchasing Co. handled 568,624 bbls. of crude oil with a peak of 79,799 bbls. in one day. Sinclair Pipe Line Co. handled 348,556 bbls. during the first 10 days with a peak of 49,875 bbls. in one day. The Oklahoma Pipe Line Co. shipped 151,635 bbls. in 10 days.

Zoning the Field

In zoning the Oklahoma City Field many express the opinion that the geologists won a point when the Corporation Commission ordered zoning of the different horizons, and revised the proration allowables to permit larger flows from wells in the Arbuckle lime and lower Simpson sand horizons. The zoning of the field follows the suggestion outlined in the original petition of Wirt Franklin, which was presented to the commission in May, 1931. Following that the Indian Territory Illuminating Oil Co. presented a petition to deplete the Arbuckle lime area in order that the water menace might be overcome and that the wells be plugged back to the gas horizons. Opposition to the plan was presented to the commission, but the protesters failed to introduce sufficient evidence to change the original petition.

At present there are 56 Arbuckle lime wells producing which have been granted 200 bbls. a day additional production, because they make water. Some of the operators express the opinion that the additional production allowed the so-called water wells will work a handicap to some of the other operators who have offset wells to the "water" wells that are not making water.

In the new order the Corporation Commission practically overrules the theory that the wells in the Oklahoma City Field are producing from a common source. Some express the opinion that a more rapid development of the possible locations in the field may develop as the result of the order if the Arbuckle lime horizon production is depleted in a short time. Additional hearings on proration and production matters for the Oklahoma City Field will be held December 8 at Oklahoma City.

Decline in Potential

A large decline in the potential gauges of the wells in the Oklahoma City Field was shown by the tests during the week. The decline is expected to average between 18 and 20 per cent since the previous potentials. A decline of 14 per cent was shown during the week in the output when approximately 350 wells had been gauged since July. This included only those wells which had previous gauges. On this basis it is estimated that the decline for all of the older wells would approximate 18 to 20 per cent, when the present potential test is completed.

These estimates do not include the new wells which were gauged for the first time during October. The potential tests on these wells are expected to more than offset the decline of the older wells, and may result in a slight increase in the total potential of the field. Many express the opinion that by January 1 the oil production from the Arbuckle lime zone will be about exhausted and this factor will remove a portion of the total potential.

Some of the potentials adjusted on the Corporation Commission's basis of one-third of the actual potential are as follows:

Company and well—	Bbls.
Addition Oil Co., No. 1 August	19,216
Anderson-Prichard, No. 1 Brown	4,252
No. 4 Gibbons	8,751
Courter Oil Co., No. 1 White	5,607
Skelly Oil Co., No. 1 Ainsworth	1,311
No. 4 Ainsworth	924
No. 4 Hoopes	1,339
No. 5 Hoopes	841
No. 7 Hoopes	887
No. 1 Martin	2,378
Hall-Briscoe, No. 1 Mueller	2,079
Shell Pet. Corp., No. 1 Petty	641
No. 3 Petty	783
Chatham Oil Co., No. 1 Lindsey	14,361
No. 1 Eckroat	13,903
Plains Oil Co., No. 1 Sadler	1,310
Century Oil Co., No. 1 Jefferson	1,122
No. 1 Barr	4,944
Rajah Oil Co., No. 1 Davis	14,569
Russell Oil Co., No. 1 Reno	16,998
Prairie Oil & Gas Co., No. 1 Sigmon	1,253
No. 2 Sigmon	1,441
No. 3 Sigmon	930
No. 4 Sigmon	908
No. 5 Sigmon	615
No. 3 Hiddleston	897
No. 5 Hiddleston	365
No. 6 Hiddleston	1,252
No. 7 Hiddleston	574
No. 9 Hiddleston	877
Mabee et al, No. 1 Mills	14,926
Shaffer, No. 1 A. Baker	5,090
Mid-Kansas Oil & Gas Co., No. 1 Fortson	203
No. 2 Mollman	2,781
No. 4 Mollman	1,413
No. 2 Browning	193
Oils, Inc., No. 1 Hathaway	14,633
No. 1 Thompson	16,191
Minnehoma Oil Co., No. 1 Pugh	18,886
I.T.I.O., No. 1 E. Trosper	2,147
British American Oil Co., No. 4 Holmes	19,458
No. 5 Holmes	13,903
No. 6 Holmes	13,558
No. 4 Eckroat	13,659

Leasing Active

Leasing activity continues on the northern edge of Oklahoma City. The Carter Oil Co. has a large block of leases adjoining the city on the north and northwest and has been clearing the titles to these leases during the last few weeks. The leasing activity has reached the townsite of Belle Isle, and has resulted in a town lot play. A large number of leases were put on record in the area.

Some of the lease transactions in Oklahoma County during the week were as follows: F. O. Harrell, Lots 1, 2, 19, 25, 41, 44 in Block 4; Lots 7, 8, 11, 12, Lots 15 to 20 and 27 to 36 in Block 5; Lots 21 to 26 in Block 6; Lots 35 to 38 in Block 9; Lots 21 and 22 in Block 11; Lots 9 and 10 and 35 to 38 in Block 12; Lots 21 to 24 and 31 and 32 in Block 13; Lots 34 and 35 in Block 15; Lots 35 to 46 in Block 15; Lots 1 and 2 in Block 16, all in Belle Isle Townsite. C. S. Davis leased Lots 8 to 15 and 20 and 21 in Block 35; Lots 6, 8, 9, 10, 11, 12, 13, 14, 15, 16 in Block 36, and Lots 1, 2, 4, 5 in Block 26, all in Military Addition. Gypsy Oil Co. leased the SE, Section 20-13-4w, north of the townsite of Bethany.

Seminole Potential

According to Umpire R. M. Collins, the potential production of the entire Seminole area is expected to reach a to-

(Continued on Page 68)

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW, Sec. 12-27-11w	S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	S.D. 5,502 ft.

ATOKA COUNTY

Campbell's No. 1 Baird, NW NE SW Sec. 31-1-13	Rig.
Edgerton Edwards' No. 2 Rowland, SE NE NW Sec. 6-1-15	Rig.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	T.D. 2,344 ft; plugged back to 1,890-1,900 ft; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cmt. to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w	S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	S.D. 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	S.D. 6,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	S.D. 1,115 ft.

CHEROKEE COUNTY

La Fiore et al's No. 1 Woods, C SE SE Sec. 27-17-21	S.D. 1,196 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McCraw, NE NW Sec. 2-1s-8	S.D. 1,165 ft.
McCraw Oil Co.'s No. 1 Ward, NE SE Sec. 35-1-8	Drlg. plug; showing 2,000,000 ft gas 1,765-1,846 ft; mudded off gas; S.D.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	S.D. 760 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	S.D. 1,450 ft.

LE FLORE COUNTY

H. E. Dowd et al's No. 1 Unknown, SE NE Sec. 17-3-22	Fishing 1,112 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	S.D. 5,850 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	S.D. 4,830 ft.

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor. Sec. 1-7-22w	5,000,000 ft. gas 1,455-65 ft; T.D. 1,760 ft.
French's No. 1 Murphy, SW NW Sec. 23-7-21w	S.D. 1,845 ft.

HARPER COUNTY

Sinclair O. & G. Co.'s No. 1 Howell, C SW SW, Sec. 14-26-24w	20,000,000 ft. gas 5,350-5,400 ft; T.D. 5,539 ft; S.D; sprayed 50 bbls. gasoline.

HASKELL COUNTY

Ault et al's No. Harrison, CWL SE NE, Sec. 14-9-19	S.D. 650 ft.
Ault et al's No. 1 Hall, NW SW SW, Sec. 14-9-19	S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW, Sec. 25-19-9	S.D. 200 ft.
Holden's No. 1 Phillips, SE cor., Sec. 3-9-18e	S.D. 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW, Sec. 10-9-18e	S.D. 2,387 ft.

KAY COUNTY

W. H. Atkinson et al's No. 1 Hayes, SE NE, Sec 24-28-3	Rig.
Lewis et al's No. 1 Harris, SE NW, Sec. 14-25-1	Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE, Sec. 9-27-2	S.D. 2,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w	Rig on ground.

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Kansas Remains Under Its Allowable

Production Down to 102,630 Bbls. Last Week. Deep Tests in Ritz-Canton-Decker Area. Oil Men Encouraged

By W. A. Spinney
Staff Correspondent, Kansas Fields

A substantial reduction in the daily crude oil production of Kansas was reported from the State during the week ending November 14. The daily average was approximately 102,630 bbls. for the seven days, a reduction of nearly 3,500 bbls. from the previous week. Most of the reduction was in the Ritz-Canton area which reports a decline of 3,000 bbls. daily. During the week the Kansas Public Commission ordered the Stanolind Crude Oil Purchasing Co. to reduce its shipments from two wildcat wells, one in Rice County and the other in Stafford County. The commission claims that the company had been taking all of the potential production from the wells, and the new order allows only 20 per cent of the potential.

Operators in the Ritz-Canton and Decker areas in McPherson County continue to seek production in the deep oil horizon. The majority of the development in the area comprises wells that are drilling deeper to test the Viola limestone.

Some of the wells recently deepened include Lario Oil & Gas Co. and Shell Petroleum Corp.'s No. 1 Lewis, NW cor. Section 36-19-2w, on the southwest edge of the Ritz-Canton Field, which made 1,352 bbls. a day on its potential gauge after a 30-quart shot in the Viola lime at 3,370-91 feet. Youker and others' No. 1 Lagree, C SW NW Section 7-19-1w, in the extreme northern part of the field and a mile east of the nearest gas production, was drilled to the Viola lime at 3,442-48 feet, where it found a showing of oil and water. The operators plugged the test back to 3,446 feet, where it is pumping around 12 bbls. of oil an hour and showing a little water. This well extends production in the Decker Field 1 mile east and indicates that the Viola lime will be productive over a large area.

New work in Sedgwick County includes the deepening of Continental Oil Co.'s No. 2 Goodrich, NW cor. NE SW Section 16-25-1, in the Goodrich Pool, where the same company recently completed a well in the Viola lime that made 500 bbls. No. 2 Goodrich was previously finished in chat at 3,038 feet. The discovery well opened a new producing horizon for the pool and the same company has two other tests drilling to the deep pay.

McPherson's Allowable

The Kansas Public Service Commission has fixed the allowable output of the Ritz-Canton and Decker areas in McPherson County for the months of November and December. The chat wells will be permitted to produce 13.2 per cent of their potential and the Viola lime wells are authorized to produce 19 per cent until such time as changes in the pipe line outlet, nominations or additional wells, necessitate a change in the allowable.

In a schedule mailed to the producers by L. R. Pickrell, umpire and agent of the commission, the order permits the area to produce a maximum daily allowable of 17,500 bbls. The 13.2 per cent allowed the chat wells fixes their allowable at 5,500 bbls. a day. After January 1 a further study will be made of the potential production situation in the area. The Viola lime wells were given the balance of the allowable percentage of 12,500 bbls. a day, or 19 per cent, being prorated on the basis of their present potential tests. A new potential gauge will be taken of the Viola lime wells on December 1.

The potential production of the Viola lime wells totaled 57,879 bbls. from 55 wells on November 1. The chat potential production on the same day was 37,424 bbls. from 54 wells. The total potential production of the 109 wells in the Ritz-Canton and Decker areas was 95,303 bbls. a day.

It has been estimated that the Ritz-Canton Pool has only developed approximately one-half of its possible locations. Since the November potentials were taken approximately six more wells have been completed, now making a total of 61 Viola wells and 54 chat wells, a total of 115 in the area.

The most recent test in the Ritz-Canton Field to extend the production was a chat well which started flowing 5 bbls. of oil an hour. T. C. Johnson and others' No. 1 McGill, SE cor. NW Section 20-19-1w, extended oil production one-half mile to the northeast by flowing 120 bbls. of oil in 24 hours from the chat at 2,948-94 feet. To the east of the well several large gas wells have also been completed in the chat. The northeast edge of the Ritz-Canton Field has not as yet been tested in the Viola lime formation and it is expected several deep tests will be drilled in the near future. The owners of No. 1 McGill decided to drill the test deeper to explore the Viola lime horizon in that part of the field and were drilling deeper at 3,100 feet on the last report.

On the Ellsworth Arch

Adding to the potential possibilities of the Ellsworth or Barton arch in central western Kansas is the wildcat well in Stafford County which has been shut in for more than a year and after being opened made approximately 1,120 bbls. a day for seven days. It is a Silicious lime producer. The well is the Mid-West Exploration Co.'s No. 1 Richardson, SE cor., Section 36-22-12w. It is the only well to produce oil in Stafford County. Many express the opinion that it is located on the same line of folding as the Schurr Field in Rice County, 10 miles to the northeast.

The order of the Kansas Public Service Commission limiting the drilling of new wells in Stafford, Rice, Barton and Ellsworth Counties to one test on each 40 acres, pending a final hearing in the matter set for December 10, at Lyons, in Rice County, may delay the starting of offset tests.

During the week the Public Service Commission notified the Stanolind Crude Oil Purchasing Co. that it must take only 20 per cent of the potential production from the Mid-West Exploration Co. and others' No. 1 Richardson in Section 36-22-12w, Stafford County, and it was ordered to reduce takings from Hilligoss and others' No. 1 Isern, Section 12-20-11w, Rice County, which was recently completed for 500 bbls. a day, to 20 per cent of the potential. A member of the commission stated that he believed the company had been taking all the potential production from both wells daily. The order was made effective until November 19. The Public Service Commission will have a hearing in Wichita during the next week to decide on the matter.

During the last few weeks conditions in the different oil areas in the State have been undergoing a change. This is indicated by several factors, one of which is the increasing number of new wells being started in the older fields. Inquiries for possible drilling locations are increasing, according to the oil companies.

Oil operators interested in the older fields were encouraged by the recent increase in crude oil prices and the unexpected order by the Public Service Commission on November 4 restricting the drilling of new wells to one on each 40 acres in four counties in the central western part of the State. What effect this order will have on the other oil areas in the State is anybody's guess.

The State's production has been under the allowable for some time and many believe it will continue at approximately the same levels while the flush areas are being prorated. Under the agreement made at Austin, where the states of Oklahoma, Texas and Kansas agreed to limit their production to the market demands, Kansas was allowed a maximum of 110,000 bbls. a day and the State has averaged less than that amount since March, 1931, when it averaged 112,858 bbls. a day.

Kansas Potential

The potential production of Kansas has been estimated between 175,000 bbls. and 200,000 bbls. a day, if all the present completed wells were allowed to produce to their full capacity. The completed wells that are shut in along the Ellsworth or Barton arch, in Rice, Ellsworth, Barton and Russell Counties, are estimated to be capable of producing from 20,000 bbls. to 30,000 bbls. a day, and wells in the Ritz-Canton Pool, in McPherson County, are credited with a potential of 95,300 bbls. a day and an outlet of 17,500 bbls. The Schurr Pool, near Raymond in Rice, has a potential of 10,761 bbls. a day and an outlet of 2,180 bbls. a day.

Activity is expected to increase in the southwestern part of the State where interstate gas lines have been completed. To increase the gas reserve it will be necessary to start a large number of new gas tests. The recent discovery of a large gas well in Haskell County, 25 miles northeast of the nearest gas well, has stimulated interest in that part of the State. The Hugoton gas field now has 115 producing gas wells with an open flow of approximately 700,000,000 feet of gas a day, and many express the opinion that this volume will be doubled during the next year by additional wells.

Ellsworth County

Robertson and others' No. 1 Stratman, C SW NE, Section 1-17-10w, is a rig moving in.

Greenwood County

Phillips and Gore's No. 9 Beal, NW cor. SE NE, Section 28-23-11, is a machine. Shull Drilling Co. made location for No. 1 Albans, SE cor. NE SW, Section 17-24-13.

McPherson County

Carey and The Texas Company's No. 1 Holt, C NW SE, Section 13-19-2w, is an old well at total depth of 2,949 feet, now drilling deeper at 3,040 feet. Olsen and Shell Petroleum Corp. made location for No. 5 Koehn, NE cor. SW SW, Section 36-19-2w. Derby Oil Co. and Empire Oil & Refining Co.'s No. 8 Domsch, SE cor. NE NW, Section 6-20-1w, is a rig going up. Goering Brothers and A. F. Perry's No. 1 Locquemont, SW cor. NE, Section 32-19-1w, has been completed for 50 bbls. in chat at 2,943-3,004. Lario Oil Co. and Shell Petroleum Corp.'s No. 1 Lewis, NW cor. Section 36-19-2w, has been completed for a potential of 1,352 bbls. in Viola lime at 3,370-91 feet. Derby Oil Co. and Empire Oil & Refining Co.'s No. 4 Domsch, NW cor. Section 6-20-1w, made 884 bbls. from Viola lime at 3,406-26 feet. Mohawk Oil Co. and others' No. 1 McGill, SW cor. NE, Section 7-20-1w, topped Viola lime at 3,406 feet, drilled to total depth of 3,408 feet and pumped 68 bbls. Slick, Pryor & Lockhart's No. 2 Gratton, SW cor. NW, Section 34-20-3w, an old well originally completed at 3,476 feet, has been plugged back to 3,466 feet and after a shot of 50 quarts produced 50 bbls.

Rice County

Slick, Pryor & Lockhart's No. 3 Schurr, NW cor. NE SW, Section 21-20-10w, topped Silicious lime at 3,317 feet, drilled to a total depth of 3,336½ feet and made 1,540 bbls.

Sedgwick County

Continental Oil Co.'s No. 2 Goodrich, NW cor. NE SW, Section 16-25-1, is preparing to deepen from 3,038 feet. Magnolia Petroleum Co. has the rig up for No. 3 Vickers, NE cor. SW SW SW, Section 17-27-2. Fisher & Lauck's No. 8 trustee, NE cor. NW NE SE, Section 19-27-2, is preparing to deepen from 2,963½ feet. Derby Oil Co.'s No. 2 Eastborough, SE cor. SW NE, Section 19-27-2, is an old well drilling deeper at 3,000 feet. Magnolia Petroleum Co.'s No. 1 Wheeler, NE cor. SW SE NE, Section 19-27-2, originally completed at 2,970 feet, is now drilling deeper at 2,975 feet.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Syndicate Oil Co.'s No. 1 Boertz, NW SE SE, Sec. 13-18-13w	Drlg. 3,070 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w	S.D. 3,156 ft.
McCool et al's No. 1 Tsern, NW SE NE, Sec. 12-20-11w	Show oil 3,313-27 ft.; swabbed 540 bbls. 20 hrs.
CHASE COUNTY	
Borden et al's No. 1 Atkinson, NW SE, Sec. 18-18-7	S.D. 50 ft.
CLAY COUNTY	
Crystal Oil et al's No. 1 Tivier, SW cor., Sec. 19-8-2	S.D. 2,700 ft.
COWLEY COUNTY	
Slocum et al's No. 1 Union National Bank, C SW SW, Sec. 16-35-4	Drlg. 1,936 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW, Sec. 13-13-2	S.D. 4,546 ft.
ELLSWORTH COUNTY	
Keyes Bros.' No. 1 Gregory, SW cor., Sec. 23-16-8w	Abandoned 3,610 ft.
Alyward et al's No. 1 Stratman, SE NW SE, Sec. 1-17-10w	Silicious 3,255-71 ft.; 117 bbls. 2 hrs.; shut in; estimated 2,000 bbls.; no pipe line connections.
Aladdin Pet.'s No. 1 Stoddenberg, C SW, Sec. 22-16-10w	Silicious lime 3,332-47 ft; estimated 1,500 bbls. a day; shut in.
FINNEY COUNTY	
National Ref. Co.'s No. 1 Wells, C SW, Sec. 13-23-30w	Drlg. 1,680 ft.
HARVEY COUNTY.	
Liggett et al's No. 1 Davis, SW SE NE, Sec. 7-24-1	S.D. 1,595 ft.
J. P. Flannigan's No. 1 Sheridan, C SW, Sec. 32-22-1	Drlg. 3,370 ft.
KINGMAN COUNTY	
Skelly Oil Co.'s No. 1 Miles, NE cor., Sec. 30-27-10w	1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; at 2,133-42 ft., 3,000,000 ft. gas; showing oil 3,385 ft; T.D. 3,441 ft; S.D.; estimated at 600 bbls. a day.
Panhandle Drlg. Co.'s No. 1 Wetherall, C SE NW SW, Sec. 20-28-10w	Rig.
MORRIS COUNTY	
Allender et al's No. 1 Wycoff, C SW SE, Sec. 5-17-7	S.D. 105 ft.

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New Permits in North Louisiana Area

New Locations Announced in Zwolle and Other Districts. Good Gas Wells Reported in Jackson, Mississippi, Field. Arkansas Operations

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Nov. 16.—This division, composed of North Louisiana, Arkansas, Mississippi and the border counties of East Texas, experienced an extremely dull week so far as new production and completions are concerned. Only one oil well and one gasser were reported out of five completions, with one wildcat test abandoned as dry and two others abandoned at shallow depths because of lack of funds to complete them. Drilling activity, however, is reflecting the optimistic effects of the recent price advance in crude, six new permits being announced for North Louisiana, five of which were for the Zwolle Field, with several new locations being reported from the other districts. The Zwolle area is feeling the effects of a drought, and lack of water for drilling operations is presenting a serious problem, particularly in the eastern part of the field. However, with the rainy season about to set in, this condition will soon right itself and an extensive campaign is expected in the Sabine Parish area.

Zwolle Producer

The only producer for the week is in the recently opened western extension of the Zwolle Field in Section 1-7-13, about 1½ miles southwest of Zwolle Townsite production. The Dengail Oil & Gas Co.'s No. 2 Nulton was completed at a total depth of 2,067 feet in marl with an estimated flow of 250 bbls. daily. It is the seventh consecutive producer for this extension, and is the shallowest well to date, having penetrated the marl only 2 feet. Most of the production in this area comes from the chalk, underlying the marl, from 2,350-2,600 feet.

The Jackson Field of Mississippi still held to its consistency of one or more good gassers each week with the blowing in of J. E. Grandstaff and others' No. 1 East and others, Section 12-5n-1e, Rankin County. The well blew in wild November 12 with an estimated flow of 35,000,000 feet of dry gas from 2,392 feet. The crew, operating with steam from the boiler of an offset test, finally forced heavy mud into the hole through drill stem to kill the well after 30 hours of uncontrolled flow.

DeSoto Failure

A wildcat failure was the Keatchie Oil & Gas Co.'s No. 1 Smith, Section 31-14-15, DeSoto Parish, near the town of Longstreet, which was abandoned at 2,350 feet. It is about 10 miles north and east of E. L. Chapman's No. 1 Pickering Lumber Co., across Sabine River in Texas from Louisiana which recently blew in as a wild gasser from around 3,800 feet. E. T. Oakes' No. 1 Bryant, Section 30-13-15, 6 miles east of the Keatchie test, is now drilling at 3,038 feet. The other two failures were practically abandoned locations as both had spudded in and shut down. Diffie and Barnette abandoned their No. 1 Lites, Section 34-8-11, Sabine Parish, at 105 feet, and in Marion County, East Texas, Gist, Claunch & Dodson moved the rig from their No. 1 Miller, H. Fulgran Survey, after making only 300 feet of hole.

East Texas Border

Only a few wells are now active in the border counties of East Texas, most of them being shut down. An important Trinity test is being drilled in the Bethany area of Panola County and at present is not indicating it will be successful. It is the United Production Co.'s No. 11 Werner, D. B. Lewis Survey, which is now reaming at 4,755 feet with a total depth of 4,916 feet. The test was dry from 4,630-94 feet and encountered lime and shale at 4,862 feet without a show. It is about 2 miles east of other Trinity gas wells where pay is encountered in Oolitic lime around the 4,700-foot level. The operators state they will drill the test to 5,500 feet unless pay is found at a lesser depth. In Harrison County, the Lloyd Oil Corp. has resumed drilling on its No. 1 Timmons, John Findley Survey; the test is now in lime and shale at 4,025 feet. In Shelby County, the Chapperal Oil Co. is building a new derrick and moving in new rig on its No. 2 Holt, Matthew Moore Survey. This wildcat, the second test in that immediate vicinity, has been shut down for several months, but had several encouraging shows along the log. McRoby and others' No. 1 Windhaw, William Leach Survey, 7 miles south of Center, Shelby County, tested dry at 2,704 feet and is arranging to deepen. The United North & South Production Co., a few miles north of the Roby test, is drilling at 3,225 feet on its No. 1 Windham, A. H. English Survey.

NORTH LOUISIANA

North Louisiana wildcats have shown nothing during the week of interest and one in particular had disappointing results. W. M. Coates' No. 1-A Bowman-Hicks, Section 18-7-13, a wildcat between the Zwolle and Blue Lake Fields in Sabine Parish, tested dry at 2,600 feet. This test has been watched very closely as a possible connection between these two producing areas. A deep test in the Zwolle Field proper, the Loring Oil Co.'s No. 18 Bowman-Hicks, Section 15-7-12, is arranging to set 9¾-inch casing at 3,950 feet with the bottom of the hole at 4,174 feet in lime and shale. As there has never been a deep test in this area the test is being watched by independent operators and major companies alike.

In the Richland gas field, the Southern Carbon Co.'s No. 1 Pollard, Section 26-16-5e, tested dry at 2,420 and 2,454 feet and is now shut down waiting orders. Another test in this field that has failed to come in as expected is the United Gas Public Service Co.'s No. 5 Earle, Section 25-17-5e, which tested dry at various depths to 2,542 feet without a show. Gas in this area is usually found around the 2,400-foot level in the upper horizon. In La Salle Parish, the Gulf Refining Co. is drilling at 4,770 feet in chalk rock on its No. 1 Tremont Lumber Co., Section 10-9-2e.

ARKANSAS

Joe Modisette and others' No. 1 Webb, Section 6-18-13, Union County, Arkansas, made a drill stem test from 2,636-45 feet which developed 1,600 feet of salt water in the hole in five minutes. A previous test of this well from 2,503-32 feet resulted in a flow of 1,000,000 feet of dry gas, which is classified as coming from the Graves sand, a sometimes prolific producer in the Smackover area. The semi-wildcat is about 3 miles west of the good producers in the northern extension of the Urbana Field where proudction is obtained around the 3,600-foot level and will be drilled to this horizon. The Drillers Oil & Development Co., after encountering salt water in its No. 1 Pickering, Section 1-17-16, at 2,134 feet, has plugged the bottom of the hole 1 foot and is bailing to test. In Crawford County, the Ozark Natural Gas Co.'s No. 1 Hammonds, Section 29-10-29, has set 6⅝-inch casing at 1,885 feet and is drilling at 2,004 feet. The Lion Oil Refining Co.'s No. 9-A Hayes, Section 4-16-15, a deep test in the Smackover Field of Union County, continues in rock salt at 6,214 feet.

Daily Average Runs

The Zwolle Field of North Louisiana had an average daily increase of 505 bbls. during the week which accounted for practically all of the 560-bbl. increase from all fields of North Louisiana and Arkansas. Daily average runs from the several pools were:

NORTH LOUISIANA

Caddo, light	6,165
Caddo, heavy	1,645
Cotton Valley	350
DeSoto-Red River	2,175
Elm Grove	375
Haynesville	4,440
Holly	335
Homer	3,840
Pleasant Hill	375
Sarepta-Carterville	920
Urania	3,710
Zwolle	6,235
Total North Louisiana	29,615
Total previous week	29,055
Increase	560

ARKANSAS

Chmapagnolle	2,080
El Dorado	3,260
Lisbon	535
Nevada	1,180
Smackover, light	3,100
Smackover, heavy	25,960
Stephens	680
Urbana	900
Total Arkansas	37,745
Total previous week	37,745
Total both states	67,360
Total previous week	66,800
Increase	560

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location— Remarks:

Arcadia Drlg. Co.'s No. 1 Mason, Sec. 28-18-6, 1,300 ft. W, 190 ft. N, SE cor. NE NW ..... Drlg. sandy shale 1,638 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14 ..... S.D. 2,890 ft.

Dr. W. N. Hankin's No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11 ..... Drlg. 1,607 ft.

D. L. Perkins' No. 1 Ardis & Co., 1,127 ft. N, 198 ft. E, SW cor., Sec. 13-16-11 ..... S.D. 1,004 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 ..... Set 12-in. csg. 110 ft.

Hudson et al's No. 1 Burton, Sec. 35-12-2e ..... S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6 ..... T.A. 3,097 ft.

DE SOTO PARISH

Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 ..... Dry and abnd. 2,350 ft.

Ben Merritt, tr.'s No. 1 Williams, NE cor. SW SW, Sec. 19-13-12 ..... Reaming 2,840 ft.

E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15 ..... Drlg. lime 3,038 ft.

Rellitt Oil Co.'s No. 1 Ganno hrs., 300 ft. S and E, NW cor. NW NE, Sec. 12-11-16 ..... S.D. 1,965 ft.

Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 2-11-13 .... S.D. 1,266 ft.

LA SALLE PARISH

Gulf Ref. Co.'s No. 1 Tremont Lbr. Co., 668 ft. N, 632 ft. E, SW cor., Sec. 10-9n-2e ..... Drlg. 4,770 ft.

NATCHITOCHES PARISH

Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10 .. S.D. 1,518 ft.

R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 330 ft. N and W, SE cor. NW NW ..... Began 11/4; set 12¾-in. 178 ft.

Mid-West Prod. Co., Inc.'s No. 1 H. Brown, Sec. 34-11-10, 200 ft. W, 330 ft. S, NE cor. SE ..... Rigging up.

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LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—FINE ISLAND

Company, farm and location— Remarks:

Shreveport Oil Corp.'s No. 2-B Muslow, 1,000 ft. S, 80 ft. E, NW cor., Sec. 32-21-15 ..... S.D. 2,135 ft.

Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15 ..... Tested S.W; S.O. 2,275 ft.

CADDO PARISH—RHODESSA AREA

United Gas Public Service Co.'s No. 1 H. J. Bussa, Sec. 33-23-16, 990 ft. W and 660 ft. S of NE cor. ..... Drlg. 5,000 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 300 ft. S, NE cor., Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Carbon Consolidated's No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N and 7,475 ft. W of cors. of Secs. 25, 26 and 49, in Sec. 50 ..... Location.

RICHLAND PARISH

Pelican Nat. Gas Co.'s No. 1 Alexander, Sec. 4-16-6, 660 ft. N and W, SE cor. Sec. ..... Set 6-in. 2,300 ft.

Southern Carbon Co.'s No. 1 Pollard, Sec. 26-16-5e, 2,710 ft. S and 563 ft. W of NE cor. ..... S.D; W.O. 2,454 ft.

Southern Carbon Co.'s No. 6 Rosengraut & Ducomb, 2,640 ft. E, 1,980 ft. N, SW cor., Sec. 19-17-6 ..... Location.

Southern Carbon Co.'s No. 8 Rosengraut & Ducomb, 2,646 ft. E, 660 ft. N, SW cor., Sec. 18-17-6e ..... Rigging up.

United Gas Public Service Co.'s No. 5 Earle, Sec. 25-17-5e, 1,980 ft. E, 1,320 ft. S, NW cor. ..... Testing 2,542 ft.

SABINE PARISH—ZWOLLE

O. J. Baird's No. 1 Duggan, Sec. 14-7-11, 328 ft. S, 648 ft. E, from center of Sec. ..... S.D. for water 2,000 ft.

Roy Baker's No. 1 Sabine Lbr. Co., Sec. 1-7-12 ..... W.O.S.R. 2,548 ft.

W. M. Coates' No. 1 Bowman-Hicks, 330 ft. S and W, of C, Sec. 2-7-13 ..... W.O.S.R. 2,441 ft.

Dengail O. & G. Co.'s No. 2 Nulton, 330 ft. N and E, SW cor. NW NE, Sec. 1-7-13 ..... Set 6-in. 2,062 ft.

O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-12 ..... S.D; W.O. 2,532 ft.

Hawkins & Antoon's No. 1 Newton, Sec. 1-7-11 ..... W.O.S.R. 2,609 ft.

(Continued on Page 74)

New Activity at Barbers Hill Dome

New Well Further Proves Up Recently Opened Miocene Sand on East Side. Additional Completions Are Due This Week

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Nov. 16.—Developments on the Gulf Coast the past week were of little importance. Further evidence of increasing activity was given with the starting up of a number of new operations in scattered areas but for the most part the week was marked by routine drilling. New activity, chiefly at Barbers Hill, however, is resulting in steadily increasing production on the coast but within the past six months development on the coast has been curtailed to such an extent that the coastal crude supply has been reduced to below the actual needs.

The only completion of any consequence on the Gulf Coast during the week was at Barbers Hill, where Sinclair Oil & Gas Co.'s No. 8 Wilburn was brought in flowing 1,275 bbls. of pipe line oil daily from sand at a total depth of 4,494 feet. Although not an extension, this well further proves up the recently opened Miocene sand on the east side of the dome, making the fifth consecutive completion in this new development.

This play has been responsible for the increases in daily production of Barbers Hill, whose output now is more than 24,000 bbls, compared to a drop to 18,000 bbls. before this new development got under way. Barbers Hill continues the most active spot on the coast with 17 rigs in operation. The majority of these are engaged in the drilling up of the new shallow sand on the east flank where numerous lease ownerships force competitive "line fights."

More Producers Due

The coming week is expected to see the completion of several additional good producers at Barbers Hill and further gains in daily output as a series of the 4,400-foot tests are either on or near the sand. Although the horizon is comparatively shallow for Barbers Hill, drilling has been slowed up in the majority of tests by a cavity condition in the cap rock and salt through which the tests must drill. The play is located well up on the dome on the inside of the circle of deep production.

On the west flank of Barbers Hill, Sun Oil Co. made only a small pumper in its No. 2 Winfree in sand at a total depth of 5,359 feet. Only one other rig is left running in that area, which less than a year ago was the center of activity at Barbers Hill. Discovery of the new shallow sand on the east flank came as operators were winding up the play on the west flank and as the latter area became proved up operators moved their rigs to the east side. Various plays at Barbers Hill have kept that dome active almost continuously since late in October, 1928, when the first important production was opened in deep sands off the east side of the dome following many years of more or less disappointing development on and around the dome. These plays usually have followed each other consecutively and as one died down a new one on another sector of the dome has sprung up, keeping operators moving from one side to the other.

Two new locations were made at Barbers Hill during the week, these being Sinclair Oil & Gas Co.'s No. 11 Wilburn, 125 feet west of No. 8, which has just been completed, and Sun Oil Co.'s No. 2 Higgins, 1,005 feet west of No. 1, in the William Bloodgood Survey on the southeast side of the dome. The latter is a north offset to Mills Bennett Production Co.'s Gulf Fisher tract, which has proved an unusually productive lease, and is closer up on the dome than the other wells drilled.

Pierce Junction

At Pierce Junction, Rio Bravo Oil Co. has deepened its No. 22-A Settegast, west flank, to a total depth of 4,311 feet and completed it flowing 495 bbls. of pipe line oil daily. Late in the week Gulf Production Co. was preparing to test its No. 33 Taylor on the south flank of the dome, which is expected to prove an important eastward extension of production. This test has two joints of 6⅝-inch casing set in sand at 3,819-36 feet. Tilton and associates' No. 1 Barnes on the northwest flank of the dome also is in sand showing oil at 3,932 feet.

Lockwood Field

Another deep test in the new Thompson (Lockwood) Field of Fort Bend County has encountered oil showings. This test, Cullen & West's No. 3-A Lockwood & Sharp, 600 feet east of No. 2-A, completed two weeks ago flowing 3,500 bbls. daily from sand at 5,151 feet, is in shale showing oil at 5,042 feet and has cemented 6⅝-inch casing at 5,025 feet to test. These wells are on the north end of the field. One other deep well has been completed on the south end. Of considerable interest was the location made during the week for No. 1 J. H. P. Davis, Robert Peebles Survey. This is the farthest south test in the area, the Davis tract being south of George tract, on which the present southermost wells have been drilled, one of which, No. 2 George, established deep production on the south side. Gulf Production Co. has rigged up for its No. 1 Mary D. Booth Meyers, a deep test, 800 feet north of production on the extreme north end of the field.

Markham

On the northeast flank of Markham, Powers Production Co. has drilled into the new sand, opened for production there several months ago by Ellis Hamill and associates' No. 1 Meyers, and is preparing to test. The Powers test, 210 feet north, slightly east, of the Hamill well, is in the sand at a total depth of 3,241 feet. The latter, which not only opened flank production but which has established an unusually good record for Markham, has shown a steady increase in flow since completion and lately has been flowing around 1,500 bbls. daily. It was completed as a 500-bbl. well. Previous production at Markham had been shallow and more or less disappointing.

Also at Markham, Deering & Newman have rigged up to work over a test drilled several years ago by West Production Co. on the Hawks tract on the northwest flank of the dome. This test, No. 1, was drilled to a total depth of 4,750 feet and then plugged to a sand around 4,150 feet where it made some gas and was abandoned.

The laying of a pipe line out of Markham by the Texas Pipe Line Co. is expected to encourage further development of the field by placing the field on a price level of other coastal fields. Although Markham has been productive since 1917 there has been no line out of the field, the oil being moved by tank car. Laying of the line is now under way.

Old Humble Field

Sun Oil Co. has started drilling in its second test on the northwest side of the old Humble Field. This test, No. 26 Bender, is 310 feet west and 20° north of No. 25 Bender, the first test, which is being rigged up to pump. No. 25, which is approximately a half mile out from shallow sand production and about midway between flank sand production on the west and extreme northwest flanks, was drilled to a total depth of 3,298 feet in salt and then was plugged to 2,850 feet, above which depth it had encountered a sand which was figured good for a pumper. This is undeveloped territory and production there will serve as a link in proving up flank production completely around the dome.

Plaquemines Parish

Humble Oil & Refining Co. is rigging up to pump its No. 6 Cockrell-Moran on the Lake Grand Ecaille Dome in Plaquemines Parish, Louisiana. It will make the second well on the dome. This test, drilled to salt at 1,574-1,613 feet, has been plugged back to approximately 1,320 feet in the cap rock where a showing for a small well had been passed. The discovery well, No. 4 Cockrell-Moran, completed earlier this year, was a 1,000-bbl. producer in the cap rock around 900 feet.

Jennings Deep Test

Yount Lee Oil Co. late in the week was coring deeper in its No. 10 Houssierre-Latrielle, deep test southeast of Jennings, Acadia Parish, Louisiana. It was showing oil and gas at 7,812 feet and if a successful completion it will be the deepest producing well on the Gulf Coast. The 7-inch casing string is set at 7,740 feet. Jennings Petroleum Co. has completed its No. 2 Eunice Crowley at Jennings making 900 bbls. of fluid, 15 per cent oil, from sand at 4,250 feet.

East Hackberry

In the new north extension pool at East Hackberry, Cameron Parish, Louisiana, Calcasieu Oil Co. has chalked up the first failure with the abandonment of No. 28 Watkins in anhydrite at 3,240-50 feet. This test got a small amount of gas in sand at 3,190 feet but was not considered of commercial importance. This company has started drilling in No. 29 Watkins, 250 feet east and 136 feet north of No. 28.

Mykawa

On the Mykawa torsion balance prospect south of Houston, Humble Oil & Refining Co.'s No. 2 Irwin, which was reported as being abandoned, has been trying to blow out and now is standing with 800 to 1,000 pounds pressure being held by the pumps against the casing. This test is in a deep sand at 6,401 feet. It has not been determined what will be done with the well.

Brazoria County

A rig has been set up for a wildcat test in what is known as the Lockridge district of Brazoria County. This will be W. D. Sutherland's No. 1 C. W. Chapman, located 250 feet north and 150 feet west of the southeast corner of Strip 2, Andrew Robinson Survey.

Big Creek

Gulf Production Co. is preparing to resume development at Big Creek, where operations have been suspended for several months. A rig already is up for No. 62 Davis, located 400 feet northeast of No. 19 and 600 feet southeast of No. 57, in the M. Young Survey.

Vermillion Parish

Pure Oil Co.'s No. 2 Southwest Louisiana Land Co., Gueydan, Vermillion Parish, Louisiana, so far has not picked up any favorable indications on that dome. This test, which follows the proving of the dome by No. 1 Alliance Trust Co., which went into salt, late in the week was drilling at 7,400 feet in dry, coarse sand. It is the deepest of the three tests which have been drilled.

GULF COAST FIELDS AND WILDCATS

Week Ended November 14
All Rotary

BARBERS HILL—CHAMBERS COUNTY

Company, farm and location—	Remarks:
Mills Bennett Production Co.'s No. 1 Gulf fee, Henry Griffith League, 50 ft. out of NE cor., Strip 15	Drlg. broken lime and salt 3,506 ft.
Mills Bennett Prod. Co.'s No. 6 Wilburn, Henry Griffith League, 125 ft. W of No. 5 in center of tr.	Drlg. rock 1,103 ft.
Mills Bennett Prod. Co.'s No. 5 Gulf-Fisher, Wm. Hodges Sur., 75 ft. from N line, 191 ft. W of No. 4	Drlg. rock 903 ft.
R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 215 ft. W of No. 1 in center of 45-acre tract	Spudded.
Gulf Prod. Co.'s No. 6 Wilburn, Henry Griffith League, 50 ft. from S line of lease and 400 ft. W of No. 3	Rock 1,315 ft.; trying to cement cavity.
McAlbert Oil Co.'s No. 2-A Higgins, Wm. Bloodgood Sur. (W.O.)	Drlg. hard sand 5,100 ft.
Nat Hunter Prod. Co.'s No. 2 Tarbutton, Henry Griffith League, 385 ft. from E line and 21 ft. from N line of tract	Total depth 5,642 ft.; drlg. sidetracked hole in shale 3,522 ft.
Nat Hunter Prod. Co.'s No. 3-B Barber, Henry Griffith League, 538 ft. from E line, 70 ft. from S line of tract	Drlg. salt 3,435 ft.; top of salt 1,381 ft.
Nat Hunter Prod. Co.'s No. 1 S. E. Morgan, 225 ft. N of S line in center of Strip 2 (4.4 acres), Henry Griffith League	Cavity 874 ft.; cem. 13⅜-in. casing 850 ft.
Sinclair Oil & Gas Co.'s No. 8 Wilburn, Henry Griffith League, 350 ft. W of No. 7 and 48 ft. from N line of tract	Set 56 ft. of 6¼-in. screen 4,494 ft.; comp. flowing 1,300 bbls. pipe line oil, 265 lbs., ½-in. choke.
Sinclair Oil & Gas Co.'s No. 9 Wilburn, Wm. Hodges Sur., 50 ft. N of S line and 550 ft. W of No. 6	Drlg. broken lime rock 1,348 ft.
Sinclair Oil & Gas Co.'s No. 10 Wilburn, Wm. Hodges Sur., 50 ft. S line, 100 ft. W of No. 9	Spudded.
Sinclair Oil & Gas Co.'s No. 11 Wilburn, Wm. Hodges Sur., 125 ft. W of No. 8 and 45 ft. S of N line	Derrick.
Sun Oil Co.'s No. 2 Higgins, Wm. Bloodgood Sur., 1,005 ft. W of No. 1 and 50 ft. N of S line	Derrick.
Sun Oil Co.'s No. 3 Smith (W.O.), W. D. Smith Sur.	Total depth 5,323 ft.; sidetracking 5,179 ft.
Sun Oil Co.'s No. 12 Wilburn, Wm. Hodges Sur., 50 ft. from N line and 75 ft. W of No. 11	Drlg. rock 1,186 ft.
The Texas Company's No. 7 Wilburn, Henry Griffith League, 116 ft. S of Humphreys Corp.'s No. 8-H Kirby	Sand showing oil 4,377-85 ft.; cmtd. csg. to test.
The Texas Company's No. 2 Lawrence, Henry Griffith League, 240 ft. from E line and 412 ft. from N and S lines of strip	Sticky shale 4,102 ft.

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Pettus Extension Test Good Producer

Twenty-two New Locations in Southwest Texas, With Starr County Again Coming to Front. Saxet Test Still Uncertain

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Nov. 16.—Any possible lingering uncertainty about the half mile southwest extension of the Pettus Pool in Bee County was removed the past week when Buck Oil Corp.'s (Buchanan & Lefevre) No. 1 Ray was brought in again flowing 500 bbls. of pure pipe line oil a day through three-quarters inch choke. But the situation in the Saxet field was still up in the air. Neal, Million & Kepley's No. 1 Roark, after whipstocking out, were down to 4,844 feet and in sand and fixing to test, the sand presumably the same as that at 4,832 feet when the first hole was drilled and which in drill stem test flowed oil in about 15 minutes.

Humble added about 700 feet to the proven territory of the Schoolfield–O'Byrne extension in Duval County by making a 500-bbl. well out of its No. 2 Paul While and S. R. C. Oil Co. and Vacuum Oil Co. extended the S. R. C. Pool in northwestern Duval County one location by completing a 250-bbl. well in No. 6 Duval Land Co.

New Locations

These and the announcement of 22 new locations which keeps up the average of increased activity were the features of the week in Southwest Texas.

Buck Oil Corp. plugged back No. 1 Ray from 3,908 to 3,898 feet and this seems to have shut out all the water. This well topped the sand very high at 3,887 feet compared with 3,919 feet in the Damac discovery well and the Buck Oil Corp. test is over 3,000 feet southwest. It is understood that a premium of 10 cents a barrel is being offered for Pettus crude and several additional tests are now under way in this extension, all of them independents. All of the acreage in fact, in the extension for some distance to the southwest is owned by independents.

Midway between the Damac and Buck Oil Corp. wells H. H. Weinert of Seguin late in the week was coring for the sand at 3,845 feet in his No. 1 Ray and due to be in it over the week-end, and Houston Oil Co., offsetting the Damac discovery well on the east, was down 3,000 feet and due to get the sand by the close of this week. W. L. Morgan is offsetting Weinert on the south and J. M. Davis is offsetting the Buck Oil Corp. on the east and C. R. M. offsetting Buck Oil Corp. on the west.

S. R. C. Oil Co. and Vacuum Oil Co. completed No. 5 Duval Land Co. for 200 bbls. of oil and a little water at 1,737 feet, and No. 6 was due to reach the sand depth over the week-end.

This field in northwestern Duval County was opened with the first hole drilled and it made a good well, which was followed by dry holes north, south and east of it. It looked for a time like a freak proposition and S. R. C. Oil Co. and Vacuum Oil Co. drilled their No. 4 330 feet west of the discovery hole and got a 600-bbl. well and now No. 5, located 330 feet north of No. 4, is in and making 200 bbls. but in addition to that a little water. No. 6 is located 450 feet north and 150 feet west of No. 5. The producers and two of the three dry holes are all in Survey 293 about 5 miles from the north and west lines of Duval County.

Activity in Starr County

Starr County, which a few years ago saw for a time an intensity of activity, is again coming to the front and several of the new locations announced lately have been in that county. A pool 4 miles north of Rio Grande City has been developed with four gas wells and five oil wells and five tests drilling. One of the gas wells, the second test drilled in the field, has been carried deeper and in addition to the first sand at 355 feet that tested 6,000,000 feet of gas with 120 pounds pressure it had a better looking sand at 656-80 feet and a still better looking gas sand at 860-78 feet and is now installing a heavy rig to drill deeper. This is Los Olmos Oil & Gas Co.'s No. 2 Kelsey-Bass down to the third sand. At that point the Rio Oil & Refining Co. is taking it on a deal to drill to 2,000 feet or deeper.

Los Olmos Oil & Gas Co. discovered the field with its No. 1 Kelsey-Bass at 371 feet testing 6,000,000 feet of gas. F. A. Hornaday of San Antonio contracted for all the gas from the field and has laid 41,200 feet of 2-inch line to Rio Grande City and is supplying that town and Fort Ringold with natural gas. Rio Oil & Refining Co. has contracted for all the oil and is now arranging to build a small refinery and supply the product of the field to the lower Rio Grande Valley.

In addition to these operations some other operators are wildcatting about 10 miles north of Rio Grande City.

Balcones Fault Zone

Not in the number of the tests drilling, but in the importance of them the Balcones Fault zone is coming back into the attention of the industry. At one time some years ago around one-third of all the wildcats drilling in Southwest Texas were in the Balcones Fault zone. Six different spots are now being watched. In eastern Milam County the Red Bank Oil Co. lost No. 1 Foster at 4,439 feet, but had reached 4,685 feet and lost the bottom of the hole and whipstocked out. Now the hole has been finally lost and abandoned after topping the chalk at 4,409 feet. It was programmed to be an Edwards lime test. The first hole encouraged the drilling of another on which they are now rigging up.

In western Lee County near Lexington two tests are shut down but due to get attention when they start up again. The geology is thought to be good.

In western Guadalupe M. E. Eiser is moving in tools and rigging up and as he expects to take cores frequently it is not anticipated he will make fast headway. This is on the Wells ranch south of the Darst Creek Field.

West of the Darst Creek Field Pray and Campbell are down several hundred feet in No. 1 Kruger and one of the things that makes the test look good is Walton's No. 1 Zoborolski a half mile southwest flowing 8 bbls. from the Austin chalk. It has considerable to its advantage favorable to opening a new Edwards lime field. Barnhill and others' No. 1 Hoffman is a few miles farther west and is down around 1,000 feet.

Caldwell County

In Caldwell County between the Luling Field on the southwest and the Dale Field on the northeast a deal has been made whereby Lloyd North will drill the test which spudded in as Ralph R. Lewis' No. 1 Keith McGee and set a joint of surface casing. Operations will start up on it at once.

These six localities constitute practically all of the important activity at this time in the Balcones Fault zone in the way of wildcatting and none is more than just getting started. Of proven activity there is none with the exception of Joe Bruner's No. 1 Malone in the Bruner Field at Luling which has been standing for some weeks at 2,572 feet. It has been shot with 20 quarts and is now cleaning out.

West of the city of Luling M. O. Rayor has made a new location on the Dunlop land for No. 3. The first hole was lost. The second hole is around 2,500 feet and is now making a head of about 15 bbls. every second day. No. 3 is a little over one location southeast of the producer with the dry hole in between them.

New Development

Development has started around two new spots in Southwest Texas. Ten miles south of the Pettus Field in Bee County Simms Oil Co. last year completed two gas wells of good big volume in the J. A. York Survey. Now Hughes and others are down below 1,500 feet in a test about 2,000 feet south of the Simms wells and Al Buchanan is this week staking the location on the Mary Dorenfield land a half mile or so east of Hughes.

Also in northeastern Jim Wells County Larcro Petroleum & Gas Co. has completed No. 2 Wade at 2,931 feet for about 50,000,000 feet of gas, located 800 feet south of No. 1 which was completed at 2,916 feet for about the same amount of gas. Larcro owns all the acreage around its proposition and drilled the second test to prove out the acreage.

Thomas & Tarver, Inc., are waiting on cement in their No. 1 Welder-Wood in northern Duval County at 2,156 feet. It showed some oil and failing to get a good seat for a drill stem sand tested they set casing.

J. E. Anderson's No. 1 Suburban Irrigated Farms in western Bexar County which got about 200,000 feet of gas in the Anacacho at 1,135 feet topped the Austin chalk at 1,340 feet and at 1,368 feet has a showing of oil and is bailing.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location— Remarks:
Jan Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1.. T.D. 2,980 ft; S.D.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan ..... T.D. 602 ft; S.D.
Theo. Hicks' No. 1 Specht, 1,500 ft. from S line, 500 ft. from W line of farm, in Thomas M. Fowler Sur. No. 27 in extreme south point of county ..... T.D. 1,650 ft.; no report.
Miles Adams et al's No. 1 Luders, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155..... T.D. 1,100 ft; standing.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 400 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City ..... T.D. 574 ft; S.D.
Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,260 ft. to N line, Sur. No. 94 ..... T.D. 712 ft; S.D.

BASTROP COUNTY

Bridwell et al's No. 1 G. A. White, 550 ft. to E line, 150 ft. to S line of farm, Nancy Roberts Sur., 4 miles SE from Belton ..... Location.
Texas Dev. Co.'s No. 1 C. H. Ray, 800 ft. from W line and 400 ft. from S line of farm, in Thos. Christian Sur. ..... T.D. 2,225 ft.; drlg.

BELL COUNTY

Bridwell et al's No. 1 Witter, 2,500 ft. to W line, 1,800 ft. to S line in Margarite Frazier Sur. ..... T.D. 615 ft.; drlg.
Field & Lange's No. 1 Stubblefield, 450 ft. from S line and 150 ft. from E line of farm in Antonio Manchaca Sur. ..... T.D. 410 ft; drlg.
W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur. .... T.D. 325 ft.; fishing.
Gas Scrogging' No. 2 Warrick, Ingram Sur. ..... T.D. 1,435 ft.; no report.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles S Skidmore..... T.D. 1,870 ft; standing.
Humble O. & R. Co.'s No. 1 Laura Thompson, 6,360 ft. from N line, 15,100 ft. from W line of tr. in Garrett Roache Sur., S part of county ..... T.D. 3,256 ft.; drlg.

BEXAR COUNTY

J. E. Anderson's No. 1 Suburban Irrigated Farms, 500 ft. to N line, 400 ft. to E line of C. Logan Sur. ..... T.D. 1,368 ft.; bailing, shows oil.

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SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location— Remarks:
Gatlin Oil Co.'s No.9 Beck ..... Location abnd.
Williams et al's No. 2 Strunk, Juan Montes Sur. ..... Location.
Witherspoon Oil Co.'s No. 2 Ramzinski, 330 ft. to W line of tract, 660 ft. S of No. 1 Ramzinski..... T.D. 1,372 ft.; drlg.

PETTUS POOL—BEE COUNTY

C. R. M. Drlg. Co.'s No. 1 Ray ..... Making location.
United Prod. Co.'s No. 39 Ray, 1,320 ft. to SE line, 2,596 ft. to SW line of T. Hanson Sur. ..... T.D. 7,106 ft.; drlg.
Buchanan & Lefevre's No. 1 Ray, 3,154 ft. from E line, 150 ft. from N line of Jno. W. Williamson Sur. ..... T.D. 3,908 ft.; comp. flowing 500 bbls. on choke.
H. H. Weinert's No. 1 Ray, 150 ft. N and E lines of lease in Jno. W. Williamson Sur. ..... T.D. 3,843 ft.; coring.
Houston Oil Co.'s No. 2 Portis, 330 ft. from N and W lines of A. Smalley Sur. ..... T.D. 1,800 ft.; drlg.
W. L. Morgan et al's No. 1 Ray, 150 ft. to N and W lines of 10-ac. lease, next south of Weinerts, John W. Williamson Sur. ..... Making location.

SIMMS POOL—BEE COUNTY

Al Buchanan's No. 1 Mary Dorenfield in John Lyford Sur. ..... Making location.
Hughes et al's No. 1 Martin, 1,000 ft. S of Simms Oil Co.'s No. 1 Holzmark in John Lyford Sur. ..... T.D. 1,554 ft.; drlg.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, 150 ft. to N line, 750 ft. to W line of tr., A. Floyd Sur. ..... T.D. 2,572 ft.; cleaning out after shot with 20 quarts.

S.R.C.-VACUUM POOL—DUVAL COUNTY

S.R.C. and Vacuum Oil Co.'s No. 5 Duval Cattle Co., 150 ft. W, 330 ft. N of No. 1 ..... T.D. 1,737 ft.; comp. 200 bbls.
S.R.C. and Vacuum's No. 6 Duval Land Co., 150 ft. W, 450 ft. N of No. 5, Sur. 293 ..... Drilling.

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Duval Oil Corp.'s No. 6 Bishop Cattle Co., 1,980 ft. to W line, 990 ft. to S line of N half of Sur. No. 135.... T.D. 2,335 ft.; set csg.

(Continued on Page 74)

Disappointing Week in Colorado Area

First Completion in Hobbs Pool, New Mexico, for Several Months Gauges 2,040 Bbls. With 9,500,000 Feet of Gas. South Dakota Abandonment

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Nov. 16.—The first completion in the Hobbs Pool in New Mexico for several months was reported in the Gypsy Oil Co.'s No. 1 East Grimes, which gauged 2,040 bbls. and 9,500,000 feet of gas. The field's potential as of November 1 was reduced by 13,650 bbls. to 1,128,590 bbls., due to one well being given a special allowable on account of water intrusion. Allowable outlet for the first half of November was placed at 37,127 bbls. daily, a slight increase. One new location and one well abandoned were reported from Eddy County.

The week was rather disappointing for Colorado operators, the Reiter-Foster Oil Co.'s No. 1 Johnson-Juhl, in the Greasewood Field, half a mile west of production, finding water in the Muddy sand, and the Colorado Associated Oil Co.'s test in Morgan County failing to show enough gas in the Dakota to clear the hole of water. The Continental Oil Co.'s No. 1 Gadbois again was delayed as a completion due to the fishing tools and cable being lost in the hole. Contract was let for the Hills Dome test in Adams County to be carried to 6,000 feet, and a shallow well in Boulder County was abandoned.

In Wyoming the Midwest Refining Co. is preparing to resume on its Geary Dome test to carry it to the Dakota, and will drill the middle dome. Prairie Oil & Gas Co.'s Bunker Hill test in Carbon County is showing up favorably and is expected to be an early completion. It gives promise of opening a new pool. The Ward Oil & Gas Co. has what appears to be a good gas well on the Dutton Creek Dome in Fremont County, which will open a new gas field. There was one completion, a 100-bbl. well, in the Osage Field.

In Montana the California Co. is abandoning one well and starting another on the Utopia structure in Liberty County and drilling activity is increasing in Carbon County. Three new operations were reported in the Kevin-Sunburst Field.

The Berry test on the Crystal Dome in Idaho found water instead of gas in the objective sand.

Gypsy Oil Co. has abandoned its Wall structure test in South Dakota.

NEW MEXICO

Lea County

The schedule of potentials and allowable outlet for the Hobbs Pool issued by Umpire C. G. Staley as of November 1, gives the total potential as 1,128,590 bbls. daily, a decrease of 13,650 bbls. from the schedule as of October 16. The decrease was due to a special allowance for another well on the southwestern side of the field troubled with water intrusion. This well is the Midwest Refining Co.'s No. 26 McKinley, C SE NW Section 5-19-38. The four wells for which special allowances have been made, one of which is off production, are all in Section 5 and Section 6. The remainder of the field has not developed any serious water problem and precautionary steps have been taken to confine the water to the local area as far as possible. The allowable outlet of the field for the first half of November was placed at 37,127 bbls. daily, a slight increase from 37,077 for the last half of October. Pipe line runs for October aggregated 1,133,102 bbls. and from July 10, 1930, to November 1, 1930, they aggregated 16,194,282 bbls.

The first completion in the Hobbs Pool reported for a number of months took place the past week in the Gypsy Oil Co.'s No. 1 East Grimes, SW NE SE Section 33-18-38, one-fourth of a mile to the northwest of the Midwest Refining Co.'s No. 29 Turner and half a mile east and south of the Continental Oil Co.'s No. 3-B State. It topped the pay at 3,965 feet and was completed at 4,165 feet. The 3-inch tubing was run to 4,132 feet. The well gauged 85 bbls. per hour, or at the rate of 2,040 bbls. per day, and 9,500,000 feet of gas. It was not as large a well as the nearest producers in both directions and this was due, it is believed, to the heavy gas pressure which held back the oil. This well is in the southeastern part of the pool and around it centers all the drilling activity now in progress.

The Midwest Refining Co.'s No. 26 State, NW SE SE Section 33-18-38, an offset on the south to No. 1 East Grimes, cemented the 10¾-inch at 2,752 feet with 400 sacks. It cut the salt at 1,700-2,571 feet. The Midwest's No. 8 Byers, SE NW NW Section 3-19-38, spudded on October 30, cemented the 16-inch at 207 feet with 125 sacks, and is drilling at 650 feet in the red beds.

Continental Oil Co.'s No. 4-B State, NE NW SE Section 33-18-38, cemented the 7-inch at 3,928 feet with 325 sacks and is waiting. The 9⅝-inch was cemented at 2,757 feet. Same company's No. 5-A State, C NW SE Section 33-18-38, is drilling at 2,380 feet. It topped the anhydrite at 1,599 feet and the salt at 1,685 feet.

National Securities Oil Co.'s No. 1 Linam, NE SE SW Section 33-18-37, to the west of the Hobbs Field, has been abandoned until drilling activities are resumed. It was drilled to 4,272 feet last February and plugged back to 4,188 feet to shut off water. Since then it has been shut down.

Eddy County

One new location was made and one well was abandoned in Eddy County. R. D. Compton's No. 1 Compton, NE NW NE Section 8-18-27, Artesia area, is a location, and J. O. Hammond & Sons' No. 1 Gillette, C NW NW Section 34-18-26, an old well drilled deeper, was abandoned at a total depth of 1,117 feet. It had sulphur water at 1,025 feet.

Western Drilling Co.'s No. 1 Green, NE cor. NW Section 29-17-29, Artesia area, is drilling at 1,430 feet in anhydrite and red shale. It had a show of gas at 1,135-40 feet.

Flynn, Welch & Yates' No. 61 State, SE NE NW Section 32-18-28, is drilling at 605 feet in anhydrite and red shale, and its No. 62, NW cor. SE Section 10-19-28, has machine on the ground.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Pajarito grant, NW cor. NE Section 22-9n-1e, is shut down at 900 feet for the 12½-inch. The 15½-inch was cemented at 896 feet.

Guadalupe County

New Mexico Producing & Refining Co., Ltd.'s No. 1 McMillan, SW cor. Section 24-5n-16, Mesa Leon district, had salt water at 2,602-18 feet and is underreaming the 10-inch for a shutoff.

Dona Ana County

Viking Oil & Development Co.'s No. 1 Cox ranch, NW SW NW Section 26-23-5e, is bottomed at 3,215 feet with the drill pipe stuck 10 feet off bottom. At this depth it is in volcanic ash. While trying to loosen the pipe, the derrick was pulled in and the hole may be abandoned. About 3,000 feet of the drill stem is in the hole. It had a show of oil at 2,310-13 feet and gas at 2,800-50 feet.

De Baca County

Matador Oil Co.'s No. 1 Wood, NE SW SW Section 6-4n-20, Salada Creek, is bottomed at 3,200 feet in granite wash, and cleaning out 18 feet off bottom. It is troubled with cavey ground and will cement.

Landowners Oil Co.'s No. 1 McAdoo, SW cor. NE Section 16-1s-27, Buffalo Creek, is drilling below 4,625 feet.

San Juan County

Continental Oil Co.'s No. 24, SW NW SW Section 1-29-19, Rattlesnake Dome, is bottomed at 6,066 feet and mixing mud, cotton hulls and baroid. Same company's No. 17 Santa Fe, C NE Section 2-29-19, the discovery well in the Pennsylvanian which is being deepened, is bottomed at 6,848 feet in dark shale and gray lime. The hole is caving on bottom. The Continental's No. 26, NW SE NE Section 2-29-19, which is drilling to the Dakotas, cemented the 6⅝-inch at 845 feet with 15 sacks to shut off water.

Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor. Section 20-28-10, Kutz Canon district, is bottomed at 3,635 feet in the Mesa Verde and cleaning out to lower the 5⅞-inch for a water shutoff.

COLORADO

Morgan County

The fate of the Colorado Associated Oil Co.'s No. 1 Pumphrey, C SE SE Section 14-4n-58, North Fort Morgan Dome, one of the most important wildcats drilling in northeastern Colorado, is still in doubt, with officials of the company still hopeful of it being a producer and others rather pessimistic of the results. This well, which found the Muddy sand nearly 800 feet higher than at Greasewood, 18 miles to the northwest, cored 15 feet of the Dakota, topped at 5,836 feet. The core was reported saturated with high gravity crude, the two upper feet showing gas. The Muddy, which was 22 feet thick, was broken and cross-bedded and had nothing better than shows. The 8⅝-inch was cemented at 5,815 feet and after the plug was drilled out it was reamed to bottom with the 7⅞-inch rotary bit. Last Saturday, in the presence of a large crowd of oil men and other spectators, bailing began. When the water had been bailed down about 3,500 feet, gas bubbles, which showed rainbows when they bursted, were apparent on the sump. Bailing continued until there was about 2,000 feet of water in the hole. Then it showed a slight scum of oil on the bailer and very little gas. Officials of the company are confident that the fluid is drilling water that entered the sand and that it will be exhausted and the oil and gas allowed to come in. The hole was being unloaded with a 4-inch bailer and a 6-inch bailer was sent for at last reports to be used in a further effort to exhaust the water. It is understood that the cores taken when the Dakota was first cored showed 12 feet of saturation and it is considered likely that the water is coming from the bottom. Future plans, in the event the well can not be made a producer at this depth, have not yet been announced.

The next well in Morgan County to be closely watched is the Prairie Oil & Gas Co.'s No. 1 Mortier, C NE NW Section 2-5n-60, Jackson Lake district, between the Greasewood Field and the Colorado Associated well and about 6 miles to the southeast of the first named. The 9⅝-inch was cemented at a corrected depth of 5,175 feet and drilling is in progress at 6,040 feet. It has been coring in the expectation of picking up a marker in the Timpas lime. Based on the Hygiene, the well is running about 200 feet higher than the wells at Greasewood.

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE Section 16-1n-57, south of Fort Morgan, is bottomed at 5,905 feet and trying to loosen stuck drill pipe. Previous to this the casing had parted and the lost joint was drilled through. This well is through the Muddy and Dakota, but there is a doubt as to whether it has yet reached the Lakota. Previous reports were to the effect that the Lakota was topped at 5,910 feet and found water bearing, but this is deeper than the depth given out by the company.

Badger Creek Oil & Gas Co.'s No. 1 Kent, SW cor. Section 2-2n-57, Badger Creek Basin, is standing at 1,420 feet.

Weld County

The Greasewood Pool developed its first disappointment this week when the Reiter-Foster Oil Co.'s No. 1 Johnson-Juhl, C SE SE Section 14-6n-61, encountered water in the Muddy sand. It is located half a mile to the west of the Continental Oil Co.'s No. 1 Briggs, the farthest north well and the best producer in the field.

Continental Oil Co.'s No. 1 Gadbois, C SE SW Section 24-6n-61, half a mile south of the nearest producer, which was counted upon to disclose important geological information concerning the field, is having more bad luck. After cementing the 7-inch at 6,578 feet and making new hole to 6,593 feet, the tools and all the cable were lost. The cable was recovered and the tools were on the way out when the cable broke on the fishing string. Most of the cable is in the hole and a 4-inch drill pipe is being run in an effort to clear the hole.

Greeley Oil Co.'s No. 1 Gadbois, C NW NW Section 25-6n-61, to the southwest of the Continental's well, probably will be the next completion, though it is not expected to drill in for two or three weeks. The 9⅝-inch was cemented at 5,550 feet and it is drilling at 6,132 feet. The 7-inch will have to be run and cemented before it can drill into the sand.

The other wells in the Greasewood area show no important changes.

Prairie Oil & Gas Co.'s No. 1 O'Toole, C SE NE Section 33-7n-62, Crow Creek district, 10 miles to the northwest of Greasewood, spudded on November 8.

Retter Oil Co.'s No. 1 Smith, C east half, Section 14-1n-66, Brighton-Lupton district, is recementing the 12½-inch at 1,262 feet.

Adams County

Hills Dome Lease Development Co.'s No. 1 Hills, SE cor. Section 27-3s-64, near Watkins, is attracting considerable attention. A contract was made this week with Siler Drilling Co. for a turnkey job on this well to carry it to 6,000 feet if necessary. Earl Decker and Joe Decker, drillers well known in the Rocky Mountain fields, will be in charge of the drilling. The well is bottomed at 3,745 feet in what the drillers claim is the Benton shale. For some time the hole has been carried full of water to hold back gas pressure. Several times the gas has caused the water to slop over the top. There is a show of oil on the top of the water. The contractors are installing some new equipment and when things are in shape the hole will be bailed to see what the gas amounts to. The drillers claim the Pierre shale here had thinned by at least 1,500 feet and the hole is now in the same formation that is being drilled by the MacDeb well at 5,800 feet. It will be completed with cable tools.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, near Aurora, is drilling at 5,845 feet, about at the bottom of the old hole which was cemented back to straighten. It is in a hard rock. Below this cap in the old hole it ran into some sand showing a little oil. This was several months ago. Since then much work has been done on the hole

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and it is now in good shape. It is showing a little gas at its present depth.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor. Section 24-4s-69, near Denver, is bottomed at 4,100 feet and trying to circulate and lower the 6⅝-inch.

Larimer County

Mayer Oil Co.'s No. 1 Reed, SW cor. NW Section 28-4n-69, Berthoud Dome, is running the 6⅝-inch to bottom at 2,400 feet. It is planned to underream and carry this string to the top of the Nio-Benton, or Wall Creek, sand. All the wells heretofore completed in this district have been troubled with cavey ground, with numerous fishing jobs and very few satisfactory completions. In the Reed well it is planned to try to overcome this difficulty by underreaming the hole just below the pipe all the way down to the objective sands and to fill it with heavy mud while going through the more troublesome formations.

El Paso County

Gulf States Oil Corp.'s No. 2 Carson, NW NE NE Section 10-16s-66, Fountain district, is hauling in a string of 8¼-inch to resume at 1,025 feet. It is just a short distance north of No. 1 Carson, which was lost at 1,900 feet. This well had 500,000 feet of gas in the Nio-Benton at 1,827-37 feet. The Muddy is expected at 2,200 feet, followed by the Dakota at 2,297 feet and the Lakota at 2,454 feet. If necessary, it is planned to carry it to the Pennsylvanian at around 3,200 feet.

Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, mudded the 6⅝-inch at 2,604 feet, and is reaming. The South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW Section 5-9-76, is bottomed at 2,495 feet and fishing for spear. This hole was drilled a little deeper to straighten before running the 6¼-inch, which is on the racks.

Moffat County

Ohio Oil Co.'s No. 1 Bogenschultz, C SE Section 9-6n-91, which is to test the Craig structure southwest of Craig, has rig on the ground.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1 Maddock, C NW SE Section 9-2s-96, Piceance Creek, is drilling at 1,980 feet and preparing to run the 12½-inch. The California Co.'s No. 1 California-Raven, NW SE Section 30-2n-102, Rangely Dome, is drilling ot 2,992 feet.

WYOMING

Natrona County

Midwest Refining Co.'s No. 11, SE NW NW Section 32-34-77, on the Geary Dome, between the Big Muddy and Salt Creek Fields, is preparing to resume after being shut down at 5,340 feet since last February. This well, which is one of the three tests planned for the Midway-Geary co-operative group development operation, cemented the 9⅝-inch at 5,331 feet and shut down until the Midway test was completed. It cut the second Wall Creek at 5,309-14 feet, that horizon showing a little gas. Operations will be resumed as soon as the crew now drilling the Colorado Associated Oil Co.'s well in Morgan County, Colorado, is released. The Olson Drilling Co. has both contracts. The middle dome between the Geary and Midway domes also is to be drilled at an early date. Since oil was found in the Dakota in the Big Muddy Field a few months ago, the deepening of the Geary test to that horizon is considered much more promising. The Midway test, the Midwest's No. 11 Middy, C NE NE Section 23-35-79, cemented back to the bottom of the second Wall Creek at 5,193 feet, and is preparing to start bailing. The second Wall Creek was on production for several months before the hole was deepened to the red beds.

Summitt Oil Co.'s No. 1 Trewitt, NW cor. Section 21-33-80, North Platte, is running casing at 1,400 feet and will cement at that depth to shut off water.

Carbon County

Prairie Oil & Gas Co.'s No. 1, SE SE SW Section 29-27-89, on the Bunker Hill Dome, north of the Werts structure, is on top of the Dakota formation and looks very promising for opening a new pool. It is bottomed at 6,122 feet and fishing for slip. As soon as this is recovered it is expected the casing will be run and cemented and the sand tested. Cores from the three Wall Creek sands showed oil and gas saturation and it is understood that some oil and gas is showing at its present depth. This is a rotary operation. Noble Brothers have the contract.

Midwest Refining Co.'s No. 27 Union Pacific, NW SE SE Section 11-20-81, Elk Mountain, is bottomed at 4,020 feet and is sidetracking bit.

Producers & Refiners Corp.'s No. 4, SW cor. SE Section 7-26-89, Wertz Dome, is bottomed at 3,541 feet and fishing for rods. It has recovered 2,430 feet. Same company's No. 7, Section 7-26-89, is cleaning out at 3,678 feet. The 4½-inch was cemented at 3,637 feet.

Fremont County

Ward Oil & Gas Co.'s No. 1, NE cor. Section 28-34-90, Dutton Basin, 12 miles east of the Muskrat Dome, encountered a flow of gas at 2,530 feet which blew the tools 300 feet up the hole. These were recovered, but the hole had bridged. Control equipment is being moved to the well and as soon as it is installed it will be cleaned and tested. The gas flow is supposed to be in the third Wall Creek. The first Wall Creek at 1,900 feet and the second at 2,300 feet had shows of oil and gas with water. The well is a wildcat and is being drilled by Aberdeen, South Dakota, people.

Kinney-Coastal Oil Co.'s No. 1 Chatterton-Weeks, C SW NE Section 22-3n-1w, Pilot Butte Field, which has been showing a steadily increasing pressure at a total depth of 3,631 feet in the Muddy, continued to increase up to 1,300 pounds where it has held steady. This pressure is built up in about an hour following the closing in of the well. The well is half a mile northeast of the big gas well drilled by this company two years ago and 250 feet down structure. It is showing for 7 to 8 bbls. of oil along with the gas. Preparations are being made to drill it a little deeper with cable tools and shoot. The gas has shown some increase along with the pressure. It originally gauged 2,000,000 feet.

Washakie County

Ohio Oil Co.'s No. 1 Strothers, SW SE NW Section 19-45-92, Neiber Dome, is coring at 8,330 feet in or close to the top of the Dakota.

Weston County

• One completion in the Osage Field was reported in the Chadron-Osage Oil Co.'s No. 14, SE cor. NW Section 14-46-64, which was shut down on top of the sand last summer to wait for better crude prices. It found the sand at 1,815-28 feet and will pump 100 bbls. per day.

Sandall and others' No. 1, SE SW SE Section 12-46-64, which was reported a 10-bbl. pumper last week at a total depth of 1,313 feet, was deepened to 1,330 feet and is showing for 20 bbls. per day.

Chadron-Osage Oil Co.'s No. 15, NW cor. SW Section 14-46-64, is spudding, and the Federal Oil Co.'s No. 1, NE cor. SE Section 15-46-64, is drilling at 2,022 feet.

Gose Oil Syndicate's No. 1, NE cor. Section 28-47-63, Soda Creek, is drilling at 5,050 feet.

Julius Peters and others' No. 1 Witzell, SE cor. NW Section 30-46-64, is drilling at 3,200 feet.

MONTANA

Liberty County

The California Co. has abandoned its attempt to test the Utopia structure in Liberty County in its No. 1 Eleanor, SE SE Section 11-33-6e, and will drill another well a little more than a mile to the north in its No. 1 Ross, NE SE NE Section 3-33-6e, which is being rigged up. No. 1 Eleanor is being abandoned at a total depth of 3,310 feet. This operation was taken over from the Utopia Oil Co., which drilled it to 3,210 feet, but was unable to go deeper on account of a bad hole. The well had good shows of oil and gas in the Ellis-Madison contact, but on account of it having stood for some time full of water, casing trouble, and other difficulties, the California Co. was unable to get a satisfactory test at that horizon and after going a little deeper, decided to quit and drill another well.

Carbon County

There is a noticeable increase in activity in Carbon County as a result of several new locations made recently. The Carbon Oil & Gas Co.'s No. 1 Armstrong, SW cor. NW Section 7-7s-21, Dry Creek, to the east of the producing wells, is delayed at 5,350 feet by pipe trouble. The casing was set at 5,111 feet. Cores from the Frontier sands showed gas and oil saturation, but the horizons were not tested as it was originally planned to go on down to the Dakota.

Ohio Oil Co.'s No. 1 Chapman, C SW SW Section 2-7s-21, is drilling at 5,380 feet and is believed to be close to the Dakota. Same company's No. 2 Montana Industrial, C NW NE Section 11-7s-21, is rigging up, and its No. 2 Souders, C NE SW Section 2-7s-21, has cellar completed. The Ohio company's No. 1 Robinson, C SW SE Section 3-7s-21, is building rig, and its No. 1 Kuchinsku, Section 15-7s-21, Golden Dome, is building rig.

Cascade County

Buscher & Cassidy's No. 1 Johnson, NE cor. SE Section 19-22-3e, Benton Lake district, has sidetracked tools at 1,010 feet and is drilling ahead and carrying the 8¼-inch. The Madison is expected at around 1,250 feet.

Charles Merz and others' No. 1 Shelfelt, SE cor. SW Section 4-21-4e, Black Horse Lake, is drilling at 450 feet and preparing to run the 10-inch. It topped the red beds at 280 feet.

Gallatin County

Montana Gas & Petroleum Corp.'s No. 1 Adams, center Section 35-2n-1e, Three Forks district, close to the boundary between Gallatin and Broadwater Counties, an operation not heretofore reported, has spudded with rotary tools. Ben Ryan, of Taft, Calif., is president of the company.

Glacier County

R. C. Tarrant's No. 1 Hogland, NW cor. SW Section 18-34-6w, Cut Bank area, is drilling at 1,800 feet and troubled with cavey ground.

L. B. O'Neil's No. 1 McNeil, C NE Section 23-35-5w, Cut Bank, is lowering casing to bottom at 2,440 feet and fighting cavey ground.

Teton County

The California Co.'s No. 1 Sullivan, NW NE NW Section 34-27-7w, Bynum district, is drilling at 2,385 feet.

Toole County

In the Kevin-Sunburst Field, the Im-

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TURNER VALLEY DELIVERIES SHOW INCREASE OVER PREVIOUS MONTH

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Nov. 14.—Official reports of pipe line runs for the Turner Valley Field for October show total deliveries of 69,522 bbls., an increase of 2,926 bbls. over September. The October total, with gas conservation in force and restriction by Imperial Oil, Ltd., on deliveries, compared with total deliveries in May of 118,614 bbls.

The increase in October was largely due to the bringing in of two new producers, Southern Lowery's No. 3 which delivered 6,447 bbls. of discolored naphtha against 2,183 bbls. for the latter part of September, and Hylo Oils' No. 1, a new producer, whose light crude deliveries for October aggregated 1,235 bbls.

Deliveries to Imperial Refineries, Ltd., for October aggregated 64,084 bbls. against 61,333 in September. The October deliveries included 18,372 bbls. of naphtha, 38,011 bbls. of discolored naphtha and 7,701 bbls. of light crude. Deliveries to Regal Oil & Refineries, Ltd., in October aggregated 5,438 bbls. against 5,163 bbls. in September.

Southern Lowery's No. 3, with 208 bbls. a day, displaced Mercury's No. 1 as the outstanding producer. Mercury's No. 1 delivered 5,833 bbls. for the month, but clear naphtha. Model Oils' No. 1 ranked third, increasing its deliveries, rated as light crude, from 5,015 to 5,205 bbls.

November, with no new producers brought in, will probably show a small decline in production.

Imperial Drilling

In South Turner Valley, Sterling Pacific Oil Co.'s No. 2, LSD 10, Section 33-18-2w5, is reported drilling at 5,132 feet, the only Imperial test now active. In the Southern Alberta border area, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is below 4,003 feet.

South Turner Valley

In South Turner Valley, Hylo Oils' No. 1, LSD 12, Section 4-19-2w5, is drilling below 5,000 feet and taking light crude from the Home sands. It is now approaching the Dalhousie where there is a further prospect of light crude production. It will be continued to the lime between 5,400 and 5,500 feet. The well is swabbed daily recovering around 100 bbls. of light crude, and considerable gas pressure is reported. Production is being delivered to Imperial Refineries, Ltd.

Miracle Oils' No. 2, LSD 16, Section 5-19-2w5, is below 5,555 feet close to the lime contact, and expected to be the next crude naphtha producer. Miracle's No. 3, LSD 11, Section 4-19-2w5, is drilling at 4,765 feet, close to the Home sands in which Hylo's No. 1 on the adjoining LSD got its big production of light crude. These two wells are testing a possible extension of the Mercury area in Section 4-19-2w5.

In the far south Mar-Jon Freehold's No. 1, LSD 9, Section 28-18-2w5, is drilling open hole below 2,650 feet. This well is testing a possible extension westward of the production tapped by Merland's No. 1 in Section 27-18-2w5.

Livingston Syndicate's No. 1, LSD 5, Section 34-18-2w5, is reported shut down at 2,100 feet.

Central Turner Valley

In the Central Turner Valley, McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, deepening with 8-inch tools in the lower lime below 5,350 feet, will test the crude naphtha possibilities below the lower producing horizon of the Madison. South of McLeod's No. 4, Regent Oil Co.'s No. 3, same LSD, which has been standing for over a year, is being completed by William E. McLeod and Hugh Walsh. It is now working below 3,490 feet.

Tests in the Foothills

In the Monarch district, west of Olda, Majestic-Cartier's No. 1, LSD 5, Section 36-31-7w5, is reported at 460 feet with a 20-inch hole. The drill has been working in a hard rock intrusion, resembling quartz.

On Fisher Creek, Cotton Belt Mines' No. 1, LSD 5, Section 21-21-4w5, is at 2,625 feet and running 8-inch pipe as a precaution against caving. It has encountered showings of oil and gas, logging close to expectations, though the formations are somewhat thicker than anticipated. Drilling is expected to resume this month.

On the Moose Mountain structure, Graystone Petroleum's No. 2 Signal Hill, LSD 9, Section 34-23-5w5, is reaming below 4,080 feet with about 120 feet required to reach the old bottom. Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is drilling around 3,260 feet.

In the High River-Aldersyde area, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is reported to have resumed drilling around 5,040 feet.

Hudson's Bay Test

In the Keho Lake district, southern Alberta, Hudson's Bay Oil & Gas Co.'s

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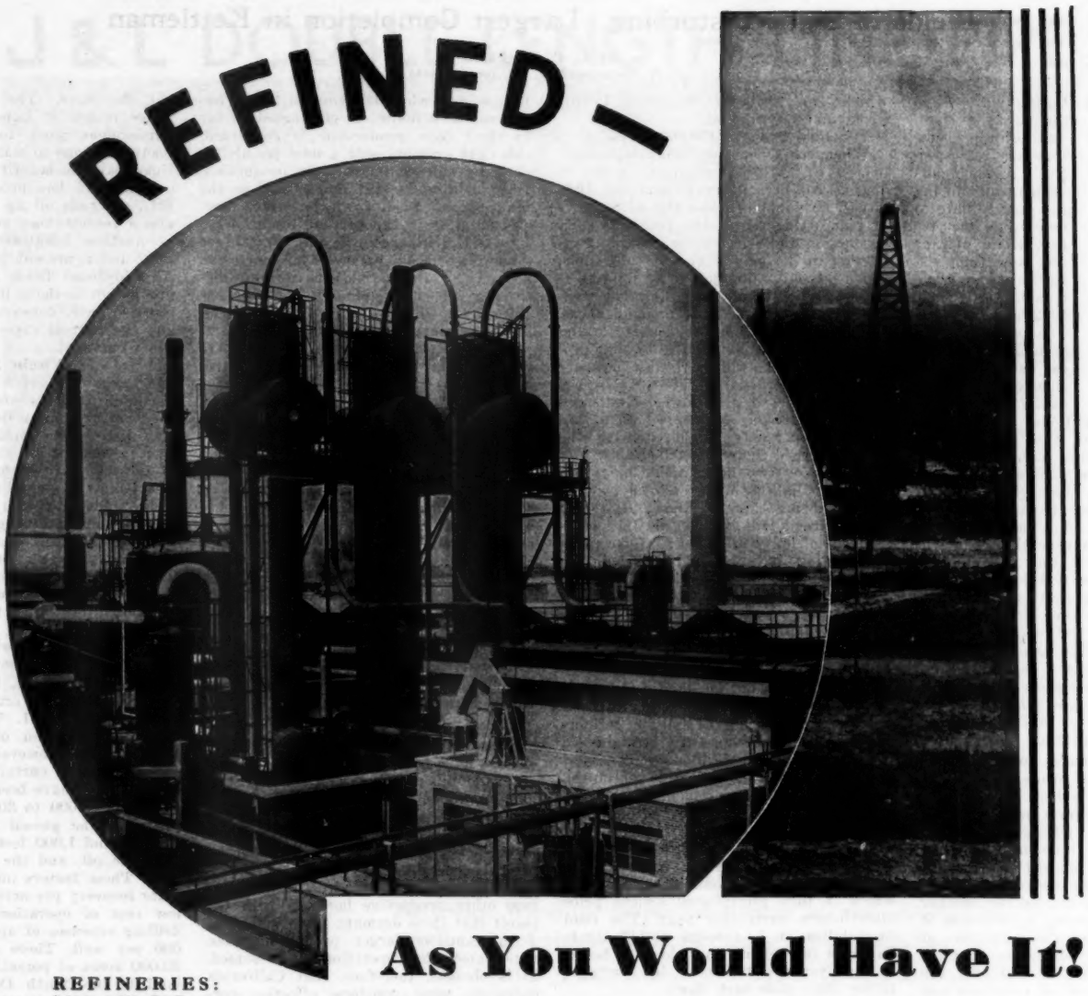

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California Must Curtail Another Year

Probable Allowable Will Be Readjusted Downward. No New Fields in Sight Disturbing. Largest Completion in Kettleman

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 14.—With 1931 rapidly drawing to a close, California operators are retrospectively reviewing developments during the year to date to determine the future trend and at the same time visualize as far as possible just what 1932 holds in store. The past year has been a rather hectic one, due principally to uneconomic marketing practices, but conditions would have been far worse if it were not for constructive curtailment of both drilling and production activities. Crude oil curtailment, statewide in scope, has been an important factor both from a conservation standpoint and as a means of preventing a permanent general breakdown. It is logical, therefore, that this stabilizing influence will be retained, especially because the future appears to hold more promise than at any time since operators began chasing the end of the rainbow several years ago. We can not hope to reach the proverbial pot of gold but at the same time an extension of the existing curtailment program will smooth the road and bring the objective just that much closer to realization.

It might not be amiss to mention in this connection that crude oil curtailment in California is here to stay and will continue in one form or another for several years. The existing curtailment program which has been in effect for more than a year expires January 1, 1932, but it is a foregone conclusion it will of necessity be extended for another year, subject, of course, to revision if developments warrant. This extension of curtailment work is obligatory if California operators wish to maintain the existing price structure or entertain any hope of realizing better prices in the immediate future as it is imperative supply and demand be brought into harmony and marketers be permitted to liquidate present excessive stocks of crude and refined oils. To accomplish this and to further the constructive program undertaken during the past year, it appears probable that a general adjustment will be made in California's potential daily production early in 1932.

Tendency Downward

Crude oil production in California has been hovering around 500,000 bbls. per day for the past few months, the output being up one week and down the next. The general tendency is definitely downward, however, due to the manifestation of a normal decline in settled fields and the cessation of drilling operations in flush and semiflush fields. California operators have not yet succeeded in getting down to the maximum allowable of 487,500 bbls. per day for any considerable period although stringent curtailment and the axiomatic decline is slowly but surely bringing state production down to this figure. The recent completion of a 30,000-bbl. well at Kettleman Hills has temporarily upset the production equilibrium but state production will be back in balance again soon. Coincident with the general improvement in the production situation, major companies have removed all distress crude from the market in the hope of stabilizing conditions, and this movement is expected to eliminate or substantially reduce the amount of distress gasoline which has seriously disturbed Pacific Coast markets all year.

May Drop to 475,000 Bbls.

When the Operators General Committee on Statewide Curtailment meets to discuss conservation activities for 1932 it will no doubt consider the advisability of readjusting the state's potential daily production and effect a corresponding reduction in the maximum daily allowable. Potential daily production at present is 1,031,500 bbls. and the allowable 487,500 bbls. per day. It is thought likely, in view of the normal decline taking place, that the maximum allowable production for 1932 will be fixed somewhere in the neighborhood of 475,000 bbls. per day or perhaps a little lower. Kettleman Hills will probably be stepped up to 75,000 bbls. per day compared with the present pegged figure of 60,000 bbls., and while one or two other fields may also be given slightly higher allowables due to their being shut in during 1931, the general trend will be towards the establishment of lower allotments. Some fields are finding it exceedingly difficult to make their present allowables, indicating either a minimum amount of curtailment or that the majors are doing the curtailing and maintaining their respective allotments.

As has been stated on several occasions, conditions on the Pacific Coast are in excellent shape as far as future possibilities are concerned, and if refiners can get the marketing angle straightened out the California oil industry can view the future with considerable optimism. The substantial improvement in the production situation is very encouraging, but stringent effective curtailment must of necessity be continued to prevent a repetition of the chaotic condtions resulting from uneconomic production, which in turn precipitated serious price disturbances early this year. The road to stabilization is a rough up-hill climb, but with the summit in sight it is better to go over the top even in low gear rather than slide back down.

No New Fields Disturbing

With the exception of Kettleman Hills, which is well under control, there are no new fields in the ascendancy in California at present, and consequently stabilization of production should be easier to accomplish. Long Beach and Santa Fe Springs are shot, to use a current slang phrase, and while Huntington Beach has not yet been definitely eliminated as far as deep zone production is concerned, this field presents only a bare possibility of being able to increase its production. Deep drilling is still under way in the Huntington Beach town lot area, however, and it is the present intention to continue drilling until the 10,000-foot level is reached to make a conclusive test. These three fields have been disturbing elements almost continuously since 1923 when all three reached their initial primary peak simultaneously and cause state production to exceed 800,000 bbls. per day and establish a potential of well over 1,000,000 bbls. within a relatively short period. At present Long Beach, Santa Fe Springs and Huntington Beach are producing approximately 72,000 bbls., 60,000 bbls. and 20,000 bbls. per day, respectively. Barring the outside possibility of a deeper productive zone at Huntington Beach, all three fields are headed for lower levels. This normal decline will be arrested from time to time as major companies open up some of the production which they have shut in. It is the present intention, and obligatory if an economic balance is to be maintained, to release this curtailed production over a relatively long period. This will eliminate the possibility of upsetting the present artificial equilibrium which is not any too firm.

Shut in 350,000 Bbls.

Conservatively speaking, California operators have approximately 350,000 bbls. of crude oil per day shut in. Of this amount about 125,000 bbls. per day in settled fields have been shut in for several years, some since 1920. In addition to crude oil production actually shut in, several companies have repressured inactive zones and injected natural gas into other productive horizons with the result that these dormant zones will show a substantially larger production than anticipated when operations are resumed. It is obvious, therefore, that California operators must continue effective curtailment for several years unless, of course, marketers are able to increase the present scope of distribution. The necessity of restricting crude oil production to an absolute minimum is very evident, especially when one contemplates the enormous potential production of virgin zones in a number of fields throughout the state. The existence of these zones makes it imperative to continue curtailment work for several years if operators hope to stabilize conditions and thus reap the benefit of higher prices.

California has produced 3,679,086,249 bbls. of crude oil up to October 1, 1931, and a recent check reveals the existence of another 5,000,000,000 bbls. recoverable under present production methods. As additional fields are discovered and production methods improved, the future recovery will consequently be increased and the normal expectancy of producing zones enlarged.

Virgin Zones

A large part of California's existing crude oil reserves are located in virgin zones in six major fields and at Kettleman Hills where prolific production has been proved for a distance along the axis of the structure of more than 11 miles. The Elliott gas zone in this field, which yields wells flowing upwards of 100,000,000 feet of natural gas per day and a crude condensate testing approximately 60 degrees, is almost entirely shut in. Two large gas wells of the Standard Oil Co. are still on production, but there is a strong probability they will be killed in the near future.

Kettleman Hills, which appears to be the largest field discovered in California up to the present, had produced only 20,398,676 bbls. of crude up to the close of September, 1931. This represents an average production of nearly 1,000,000 bbls. per well, however, anl indicates the effectiveness of curtailment in this field, as new wells have been completed all the way from 5,000 to 30,000 bbls. per day initially. The gas-oil ratio is unusually low, around 1,000 feet of gas per barrel of crude oil, and the gas pressure very high. These factors indicate a large ultimate recovery per acre and a consequent low cost of operation nothwithstanding drilling expenses of approximately $250,000 per well. There are approximately 30,000 acres of potentially productive oil land in the North Dome of Kettleman Hills and this estimate may even be exceeded as the limits of production have been established in only one direction.

Deep Production

Fields having known deep productive zones which have not yet been developed include Ventura Avenue, Elwood, Inglewood, Dominguez, West Coyote, Fullerton and Santa Maria. The Associated proved a new deep zone in the Ventura Avenue Field a few months ago, and this well, which came in flowing approximately 5,000 bbls. per day, has been shut in. The existence of commercial production in the Seepe formation at Elwood was definitely proved a short time ago by the Barnsdall and Rio Grande, which are operating jointly in this district.

Two deep zones were discovered in the Inglewood Field several years ago but the Associated, Shell, Standard, Pacific Western and other interested operators have retarded deep drilling. The field has produced 78,492,619 bbls. of crude oil since discovery. The Dominguez Field, with 48,622,111 bbls. to its credit, has two more productive zones below the third Callender zone now being conservatively developed. At West Coyote, the Standard has proved two deep zones, but is holding back production and development work until conditions improve. In the Fullerton Field, the deep zone is being partially produced but only on a small scale. In the Santa Maria Field drilling and production activities have been entirely suspended.

Kettleman Hills

The Kettleman North Dome Association focused the attention of operators on the Kettleman Hills Field again this

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	68,690
Fuel oil	.....	.....	.....	.....	.....	71,950
Diesel and gas oil	.....	.....	.....	.....	1,473,198	3,216,037
Gasoline	.....	.....	115,620	16,517	11,447,682	17,157,602
Kerosene	.....	.....	.....	.....	187,934	.....
Coastwise—						
Crude oil	277,410	39,630	268,788	38,398	13,684,531	13,765,045
Fuel oil	365,666	52,667	288,436	41,205	11,443,241	15,951,666
Diesel and gas oil	24,852	3,265	39,650	5,664	1,314,957	1,478,738
Gasoline	414,812	59,259	427,711	61,102	12,473,472	11,039,390
Kerosene	.....	.....	13,336	1,905	280,718	151,436
Naphtha distillates	.....	.....	.....	.....	4,952	.....
Exports—						
Crude oil	91,750	13,107	156,428	22,347	6,261,620	6,154,249
Fuel oil	82,450	11,779	473,992	67,713	11,720,427	15,315,152
Diesel and gas oil	94,097	13,442	61,805	8,829	3,171,843	3,899,820
Gasoline	.....	.....	317,818	45,403	7,424,557	13,934,140
Kerosene	231,915	33,131	.....	.....	1,627,963	3,145,249
Lubricants	.....	.....	.....	.....	36,353	27,424

TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	279,088
Gasoline	.....	.....	.....	.....	883,929	1,080,671
Lubricants	.....	.....	.....	.....	35,236	27,796
Coastwise—						
Fuel oil	74,490	10,641	101,709	14,530	3,105,238	2,889,342
Diesel and gas oil	.....	.....	.....	.....	350,919	310,222
Gasoline	.....	.....	154,466	22,067	3,892,562	3,806,943
Kerosene	.....	.....	12,950	1,850	279,174	201,060
Naphtha distillate	.....	.....	.....	.....	49,780	.....
Exports—						
Crude oil	.....	.....	80,502	11,500	410,751	59,993
Fuel oil	80,124	11,446	.....	.....	1,428,731	866,296
Diesel and gas oil	.....	.....	.....	.....	482,708	487,589
Gasoline	166,817	22,974	138,231	19,747	4,056,353	3,571,126
Kerosene	.....	.....	18,590	2,656	802,322	570,271
Lubricants	.....	.....	.....	.....	25,693	33,579

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week by bringing in another big well, its second successful completion within five days. The association started off the month of November by finishing its well No. 4-28-J flowing 26,755 bbls. initially from 8,397 feet. A few days later the association completed No. 25-28-J flowing 30,120 bbls. of exceptionally clean 36.4 gravity oil and 32,397,000 feet of natural gas per day from 8,297 feet. This latter completion is the largest well finished in the Kettleman Hills Field, although several other producing wells are capable of matching this record if turned loose. Other operators, however, have refrained from making maximum flow tests due to the inability to produce without exceeding the established pegged allowables. The North Dome Association has already shut in No. 4-28-J and has pinched back the production of No. 25-28-J to a little better than 1,200 bbls. per day. The latter well, located in Section 28-21-17 and on property originally controlled by the Milham Exploration Co., is a diagonal offset to the Superior's No. 1 Huffman. It is in the northwest corner of the property and only a short distance south of No. 4-28-J which was originally started by the Pacific Western Oil Co. and subsequently turned over to the association. Both these wells were necessary to prevent undue drainage of Milham and Pacific Western property by three wells of the Superior Oil Co., one of which is shut in and the other two pinched back to 4,000 bbls. per day.

Since the beginning of unified development at Kettleman Hills, a number of important things have been accomplished, notable among which has been the shutting in of two big gas wells each producing approximately 75,000,000 feet of gas per day.

Ventura Avenue

In the Ventura Avenue Field, the Associated completed two new wells on the Lloyd lease during the past week. No. 81 bottomed at 7,000 feet and finished with a string of 9-inch cemented at 7,285 feet and a 4¾-inch flow string hung at 5,335 feet was brought in doing 1,099 bbls. of clean 30.3 gravity oil and 790,000 feet of natural gas per day. No. 109 was completed flowing 810 bbls. of 28 gravity oil cutting 18 per cent water and 1,370,000 feet of natural gas per day. It was finished at 6,964 feet with a 6⅝-inch liner carrying 520 feet of perforated but may be worked over unless the production cleans up. The Associated has two other potential producers nearing completion in the Ventura Avenue Field at present and they should be tanking oil within 10 days.

The Continental Oil Co. has effected a satisfactory water shutoff in No. 1 Grubb, a wildcat in the San Miguelito district between the Rincon and Ventura Avenue Fields, on the 9⅝-inch pipe landed at 6,472 feet. The hole is at present being cleaned out to bottom preparatory to another early production test. This wildcat flowed at the rate of 1,000 bbls. per day several weeks ago and the outcome of the production test to be made within the next 15 days will be watched with interest. There were no new developments in the Elwood Field as drilling operations have been reduced due to the recent decision of operators to retard drilling operations in the recently discovered deep zone in the Sespe.

Lost Hills Field

The Lincoln Petroleum Co. made a short swabbing test on No. 1-A Theta in the Lost Hills Field of Kern County but the well failed to respond with a natural flow and further work will be required. Tubing has been pulled and the well is now being bailed down to remove drilling mud and at the same time bring in formation fluid if possible.

In the Belridge Field, the Belridge Oil Co. made another unsuccessful production test on its well No. 49 after plugging back from 5,595 feet to 5,544 feet. The well flowed at the rate of 4,500 bbls. per day, but still showed a cut of 65 per cent and the company will consequently be obliged to put in another plug. The Valley Exploration Co. finished a 2,000,000-foot gas well in the Dudley Ridge area this week when No. 7 Veco in Section 12-23-19 was given a test at 1,141 feet. The well was immediately shut in pending final decision on the request to use this dry gas to fill gas requirements during the coming winter months. The Milham Exploration Co. failed to develop commercial gas production in No. 1 Crites in the Buttonwillow gas field at 3,527 feet and preparations are under way to drill ahead for further exploration.

Dominguez Field

The Union Oil Co. added another new well to its list of producers in the Dominguez Field early this week when No. 25 Callender was brought in flowing 510 bbls. of clean 30.5 gravity oil per day from 4,577 feet. There are three other incompleted drilling wells under way in this field which should be tanking oil before the close of another month. In the Playa Del Rey Field, the International Petroleum Co. completed No. 4 Venice flowing 545 bbls. of 22.4 gravity oil per day from the Recreation zone at 6,252 feet. The Bellview Oil Co. is making good progress in its No. 6 in the Santa Fe Springs Field and judging by its present status at 4,925 feet it should be tanking oil within 30 days. There are several wells being redrilled and deepened in the Potrero town lot section and while some will probably be successfully completed they are not expected to cause any great fluctuation in state production as none of the various zones in the Potrero Field has shown sustained production.

WILDCAT IN CENTRAL MICHIGAN MAKES 30 BBLS. IN TWO FLOWS

By Special Correspondent

MOUNT PLEASANT, Mich., Nov. 14. Completion of two good oil producers in the proven field and striking a producing oil well on a wildcat location 2½ miles east of the established pool comprised the chief developments in the central Michigan oil and gas fields the past week.

Columbia Oil & Gas Co. completed its No. 3 Hornick, located in Midland County, Greendale Township, Section 15, NW NW NW, with 1,100 bbls. per day. The Dundee sand was reached at 3,501 feet, the top of the pay at 3,539 feet, and the well completed at 3,567 feet.

Pure Oil Co. brought in No. 1 Mullet the same day with an initial 24-hour production of 1,600 bbls. The well is located in Midland County, Greendale Township, Section 15, NW NW NE. The Dundee was reached at 3,504 feet, the top of the pay at 3,525 feet and the well completed at 3,567 feet.

The two producers are in the new east pool, 12 miles east of Mount Pleasant and about 2 miles east of the old Chippewa-Greendale Pool where developments had centered until July, 1931. Columbia Oil & Gas Co. drilled in the Hornick wildcat in July, which made around 700 bbls. a day. Since that time 16 other producers have been struck in the pool, ranging in production from 700 bbls. a day to 3,600 bbls. a day. Pure Oil Co.'s No. 1 Bernard, Section 9, Greendale Township, made 3,600 bbls. a day when drilled in and set the record for big wells in central Michigan. No dry holes have been struck in the new pool.

A wildcat drilling project 2½ miles east of the proven new east pool is holding the major attention of oil men in Michigan. It is the No. 1 Hewitt, located in Lee Township, Midland County, Section 18, SW NW NW, which was drilled into the Dundee. The well in two flows the first few hours after being drilled in made 30 bbls. of oil and strong show of gas. It was shut down temporarily and is to be drilled deeper after being swabbed and cleaned out.

The well is a project of L. G. Thompson. It is the first to be put down in Lee Township, and with it already having made production and a gas show oil men regard it as one of the most important tests made in the field in recent months. It extends the proven field nearly 3 miles. The Dundee was reached at 3,525 feet, the top of the pay at 3,549 feet and production at 3,565 feet.

Walter Lee McClanahan's No. 1 Morrison, Midland County, Greendale Township, Section 10, SW SW SE, and Pure Oil Co.'s No. 2 Lilly, Midland County, Greendale Township, Section 10, NE SW NE, both in the proven field, were being drilled into the Dundee sand.

Solms Brothers' No. 1, Midland Coun-

(Continued on Page 67)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	7,350	cemented
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Westwood Oil Co., No. 2 Hermosa, Los Angeles Co.	6- 4-14	2,151	suspended
Baxter Pet., No. 1 Hermosa, Los Angeles Co.	5- 4-14	rig	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	2,700	suspended
Pacific Shore Oil Co., No. 1 Lawndale, Los Angeles Co.	20- 3-14	rig	suspended
Lawndale Pioneers, Inc., No. 1 Peck, Los Angeles Co.	20- 3-14	50	drilling
Wilmington Consd., No. 1 Watson, Los Angeles Co.	17- 4-13	1,012	suspended
Ranger Pet. Co., No. 1 Watson, Los Angeles Co.	28- 4-12	1,896	sd. sh. drilling
Pedro Pet. Corp., No. 1 San Pedro, Los Angeles Co.	14- 3-14	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	2,350	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-13	1,870	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31- 2-13	116	sd. drilling
Weist Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	4,902	idle
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6- 2-11	5,011	suspended
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,919	suspended
Yellowstone Oil Co., No. 3 Alhambra, Los Angeles Co.	19- 1-12	2,015	fishing
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	28- 1-17	1,004	br. sh. drilling
Caballero Estates, No. 1 Calabasas, Los Angeles Co.	23- 1-16	1,260	cemented
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,960	suspended
Simi Oil Co., No. 1 Calabasas, Los Angeles Co.	18- 1-17	3,145	br. sh. drilling
Simi Oil Co., No. 2 Calabasas, Los Angeles Co.	18- 1-17	90	drilling
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6- 2-16	1,170	hd. sd. drilling
Superior Oil Co., No. 1 Newport, Orange Co.	27- 6-10	3,434	sd. sh. drilling
Ajax Pet., No. 1 Newport, Orange Co.	11- 6-10	5,848	br. sh. drilling
Vaqueros Major, No. 1 Tideland, Orange Co.	32- 5-11	1,022	suspended
Beck, Alfred, No. 1 Corona, Riverside Co.	8- 4- 6	1,110	suspended
Alberta Oil Co., No. 1 Elsinor, Riverside Co.	35- 2- 3	3,435	suspended
Duncan, N. I., No. 1 Sagebrush, Riverside Co.	8- 4- 6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	35- 1- 2	3,393	redrilling
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	615	sd. sh. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Lomas, San Diego Co.	30-16- 3	5,124	suspended
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	1,243	suspended
Itasca Pet. Co., No. 1 Mesa, San Diego Co.	33-18- 1	1,570	fishing
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 6- 8	5,250	suspended
Oklahoma Oil Corp., No. 1 Palms, San Diego Co.	26-11- 8	510	redrilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S. T. R.	Depth	Status—
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	7,988	br. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-35	3,450	suspended
Ohio Oil Co., No. 1 Goleta, Santa Barbara Co.	16- 4-28	5,521	redrilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,583	gas; shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas; shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	6,912	plug 6,625 ft.
General Pet., No. 133 Goleta, Santa Barbara Co.	21- 4-28	2,030	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	2,053	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	2,051	suspended
Bowles Oil Co., No. 140 Goleta, Santa Barbara Co.	21- 4-28	2,065	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	2,004	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	2,012	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	2,010	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	2,010	suspended
Bellview Oil Co., No. 159 Goleta, Santa Barbara Co.	24- 4-29	2,099	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,134	suspended
Strickland & Tippett, No. 1-A Goleta, Santa Barbara Co.	19- 4-27	4,886	suspended
Sovereign Oil Co., No. 1 Guadalupe, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Continental, No. 1 Rincon, Ventura Co.	28- 3-24	6,640	fishing
Bell, H. H., No. 1 South Mountain, Ventura Co.	22- 3-21	1,165	sd. sh. drilling
Pure Oil Co., No. 1 S. F. Canyon, Ventura Co.	15- 4-21	2,591	suspended
San Pedro Oil Co., No. 2 Sespe, Ventura Co.	13- 4-21	3,612	sd. sh. drilling
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-21	5,225	may abandon
Mex Cal Oil Co., No. 1 Conejo, Ventura Co.	13- 1-20	240	suspended
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-27-22	4,782	sd. sh. drilling
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	suspended
Milham Expl. Co., No. 6 Buttonwillow, Kern Co.	8-28-23	3,527	suspended
Furman, T. H., No. 1 McKittrick, Kern Co.	23-29-21	501	suspended
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	30-31-24	5,367	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	7,161	br. sh. drilling
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	suspended
Rio Cal Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Wicker, Sy., No. 1 Arin, Kern Co.	13-30-28	3,850	gr. sh. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,910	suspended
Osborn, Colter, No. 1 Weed Patch, Kern Co.	15-30-29	3,465	suspended
Osborn, Colter, No. 2 Weed Patch, Kern Co.	15-30-29	2,000	testing
Fullerton Oil Co., No. 1 Semitropic, Kern Co.	25-27-23	765	sd. sh. drilling
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,600	suspended
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	2,950	suspended
Signal Oil Co., No. 1 Blackwell Corner, Kern Co.	15-26-19	106	suspended
United Kern Pet., No. 1 Mojave, Kern Co.	36-10-14	1,065	suspended
Meridian Oil Co., No. 1 Mojave, Kern Co.	11- 9-15	3,910	hd. sd. drilling
Kendall Dev. Co., No. 1 Mojave, Kern Co.	27-11- 9	765	hd. sd. drilling
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	redrilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	6,197	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	rig	rigging up
Panorama Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-31-21	4,015	suspended
Kent & McDonald, No. 1 Carrizo, San Luis Obispo Co.	3-32-22	3,278	br. sh. drilling
Trav-El Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-31-22	3,450	suspended
Paso Robles Synd., No. 1 Paso Robles, San Luis Obispo Co.	34-27-11	4,040	suspended
C. Coast Inv. Co., No. 1 Atascadero, San Luis Obispo Co.	1-28-12	1,040	br. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	1,475	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	1,440	hd. sd. drilling
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-23-14	1,051	suspended
Guess, W. G., No. 1 Monocline, Kings Co.	7-21-21	6,197	resume work
Lacal Gas Co., No. 1 Dudley Ridge, Kings Co.	32-22-20	rig	rigged up
Irma Investment Co., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,345	gas well, idle
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well, idle
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-23-20	411	sd. drilling
Kettleman Lakeview, No. 1-A Dudley Ridge, Kings Co.	30-23-20	1,170	gas well, idle
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	12-23-19	1,287	redrilling
Valley Expl. Co., No. 2 Dudley Ridge, Kings Co.	12-23-19	1,141	cemented
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	4,315	suspended
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	7,694	suspended
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	2,120	suspended
Tulaco Oil Co., No. 1 Corcoran, Tulare Co.	17-22-22	....	material
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	3,092	suspended
Ellis & Stanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,920	sd. sh. drilling
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	970	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,220	hd. sd. drilling
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	3,040	suspended

Central Ohio Field Maintaining Activity

Eleven Completions Reported. Stark County Leading Operations With 32 Wells Drilling. Development in Kentucky and Michigan

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, No. 16.—In the old Lima Field of northwestern Ohio, there are a few wells under way that will be brought in in the near future. In Hancock County, Portage Township, Mathias Brothers' No. 15 Isaac Hart farm, Section 27, is due for completion. C. A. Peavy is drilling No. 9 Samuel H. Vore farm, Section 12, Bath Township, Allen County.

A. A. Lauber has No. 1 drilling on the J. Stolz farm, Section 33, Butler Township, Mercer County.

Four wells are under way in Seneca County, known as the Tiffin Field, where Clarence Donnells is drilling No. 1 Frank Bosler farm, Section 1, Hopewell Township, and J. L. Barrett is drilling No. 1 T. N. Einsel farm, same section. Arthur E. Geyer is drilling No. 3 F. E. Baldwin, Section 30, Clinton Township, and Byron Jones drilling No. 1 Jacob Ash farm, Section 6, Liberty Township.

In Hardin County, Wiser Oil Co. is drilling No. 6 and 7 Grant Geiger farm, Sections 12 and 13, Cessna Township.

In Wyandot County, McPheron, Miller & Cook are drilling No. 2 on the Bowman-Billhart farm, Section 21, Tymochtee Township. No. 1 on this farm, completed a week or so ago and showing a nice gas volume, after given a shot put 8 inches in a 100-bbl. tank in one hour and makes a very nice oil well. R. W. Kurts and others are drilling on the Elmer E. Moser form, Section 12, Bridge Township, same county.

In Darke County, Lee Booth is drilling on the Walter Richardson farm, Section 7, Mississenawa Township. This is better known as the Landis farm.

Simms Oil Co. is drilling on the Milton Yoder farm, Lot 10,503, Richland Township, Logan County.

CENTRAL OHIO

The Central Ohio Field maintains its gas and oil development work and leads others, there being 11 completions of which one is a producer with an initial of 40 bbls., eight gas wells and two dry holes. Much of the work over the field is centralized in Stark County, as there are 32 wells drilling, 6 rigs and locations staked, a total in this county of 38 wells under way. On the outer edges of the field there are two completions in Meigs County, and one in Lawrence County.

In Holmes County the Lydic Oil & Gas Co. has a light gas well at No. 3 F. C. Close farm, Section 23, Monroe Township, the gas being found in the Berea sand from 924 to 931 feet.

In Richland County the Ohio Fuel Gas Co. has an average gas producer in No. 1-5,555 on the J. W. Pollock farm, Section 32, Monroe Township.

In Coshocton County, Murphy and others have abandoned their test on the Myers-Mossholder farm, Section 15, Perry Township, which was not a commercial producer.

In Musingum County, the Ohio Fuel Gas Co.'s No. 1-5,314 on the Martha Myers farm in the fourth quarter of Washington Township, shows for 40 bbls. in the Clinton lime from 3,889 to 3,932 feet.

In Athens County, Berne Township, the Bowman Oil & Gas Co. is drilling on the Warner J. Pinkerton farm.

In Tuscarawas County the Ohio Falls Drilling & Supply Co. is shut down on the Long-Leighty farm, Lot 22, Clay Township. Wiser Oil Co. has a rig on the Holden Clay Products Co.'s land in Lot 9, Sandy Township, and the Oxford Oil & Gas Co. is drilling No. 2 Clarence Hogue farm, Lot 39, Washington Township, same county.

Stark County

In Stark County, Lawrence Township, the Wittmer Oil & Gas Co. has a fair gas well on the C. R. Dahlen farm, Section 23, in the Clinton lime from 3,945-86 feet. Timken Roller Bearing Co. is shut down at 4,900 feet on the H. and M. Essick farm, in Paris Township. In Jackson Township, East Ohio Gas Co. has a very nice gas producer on the George H. Charles farm, Section 25, in the Clinton lime from 4,386 to 4,416 feet. Same company is drilling Nos. 1 and 2 Earl Johnson farm, Section 25, as well as No. 1 Besse J. Slagel farm, Section 14. Brendall and others have a fair gas producer in No. 5 Lake Cable farm, Section 23, in the Clinton from 4,397 to 4,437 feet. Same party is drilling No. 1 J. J. Kurtzeman farm, Section 16, Jackson Township.

In Fairfield County, Westerman Brothers test on the S. and M. E. Miller farm, Section 29, Richland Township, is a light gas well in the Berea sand from 719 to 720 feet. Perry Sturm and others are drilling No. 4 William S. Johnston farm, Section 2, Rush Creek Township.

In Guernsey County, Wheeling Township, Commonwealth Oil Corp. is drilling No. 3 J. N. Fowler farm, Section 10, formerly owned by the Kemrow Co. E. O. Quillan and others are drilling No. 2 Isiah Cremlett farm, same section. In Jackson Township, W. B. Urban and others are drilling No. 2 on the Guernsey Valley Fair Grounds, Lots 21 and 22.

In Belmont County, Somerset Township, Berbacher and others have a light gas well on the James Butler farm, Lot 31, same township, in the Berea sand from 1,705-12 feet.

In Scioto County, Jefferson Township, Kingsley and others found a dry hole on the C. J. Pendleton farm, Section 11.

In Carroll County, Orange Township, Turner and others' test on the John H. Scott farm, Section 29, proved a duster in the lower Berea at 1,222 feet.

In Meigs County, Joe Kiggins and others' test on the Robert Jacks farm, Section 28, Rutland Township, is an average gas well in the Maxon sand from 747 to 761 feet. Scioto Oil & Gas Co.'s No. 2 H. F. Johnson farm, Section 35, Salisbury Township, same county, is a fair gas well in the Maxon sand from 813 to 837 feet.

Lawrence County

In Lawrence County, in the extreme southern part of Ohio, there is a little excitement. The well drilled by C. C. Wolfe and others on the William J. Suiter farm, Section 23, Union Township, is a very fair gas producer at a total depth of 2,806 feet. Some concern is starting a test on the W. O. Eaton heirs farm, Section 25. Cummings and others are drilling No. 1 James Eaton, Jr., farm, Section 24. T. G. Ray & Son Gas Co. is drilling No. 1 Irene R. Smith farm, same section. Fox & Ray are drilling No. 1 J. L. Wilson farm, Section 31. Chartiers Oil & Gas Co. started drilling on the Harry Smith farm, Section 13, and made a location for No. 1 J. P. Eaton farm, Section 21, also in Union Township. In Perry Township, same county, Ralph Brothers have rigged up for No. 4 on the T. A. Knull farm, Section 20, and are waiting to get water for operations. Sears and others are rigged up on the M. Nicholson and others, in Section 4, same township.

In Jackson County, Jackson Township, Kessler and others are drilling No. 1 Theodore Cooper farm, Section 14.

In Vinton County, Elk Township, Wittmer Oil & Gas Properties is shut down at 2,940 feet at No. 1 Daniel Will farm, Section 2. In Brown Township, Kelch Brothers are spudding in No. 1 on the George W. Gibbons farm, Section 35, same township.

In Meigs County, Stewart & Ross are spudding No. 6 on the S. C. and Gazelle Staneart farm, Section 6, Bedford Township. F. O. Royalty Co. is drilling No. 2 Cora L. Russell farm, Section 35, Salisbury Township, same county. Simpson & Rice are drilling No. 1 Thomas Jackson farm, Section 11, Sutton Township, same county. John Mayer and others are close around 1,000 feet in No. 3 Virginia Johnson farm, Section 11.

INDIANA

With 16 completions reported from various parts of the Indiana Field there were four producers with an initial production of 80 bbls., four gas wells and eight dry holes, which is not so bad for wildcat development work. Perry County, in the extreme southern part of the State, had six completions, one being a 30-bbl. producer and the other five were dry holes. The producer was Conyers & Buggmin's No. 4 L. Aders farm, Section 4, Clark Township. The five dry holes were Lane, Beard and others' test on the Lanman farm, a mile south of Bristow, at a depth of 550 feet; Alma J. Glenn's No. 1 J. F. Glenn farm, in the SE of Section 12, Tobin Township, near the hamlet of Gerald; John H. McClurkin's No. 1 Doogs farm, SE Section 9, Oil Township, a mile east of the good wells on the Aders farm; Roger E. Williams' No. 1 Louis LeGrange farm, SW Section 21, and August Walter's No. 1 Ed Cassidy farm, SE Section 4, Leopold Township, dry at 1,430 feet. Unknown parties are drilling a test on the William Schmall farm, NW Section 34, Tobin Township, same county. H. C. Darby Co. is drilling No. 1 U. B. Cummings farm, Section 8, Tobin Township, and Hughes, Rife and others are drilling No. 1 John Kaufman farm, SE Section 17, Clark Township, along Highway 37. Fred Conyers is drilling No. 1 Jerome Cassidy, NW Section 30, and Lane, Beard and others are drilling No. 1 Ben Harpman farm, Section 16, Anderson Township, same county.

In Knox County, Busseron Township, L. J. Lloyd has what shows for a 3,000,000-foot gas well, and unknown parties have a fair gas well on the Prater farm, SE Section 3, Harrison Township. J. E. Young is drilling No. 1 Floyd, same township. O. A. Thayer is drilling No. 1 John Black farm, in the NW cor. of Section 11, Busseron Township.

O. A. Thayer drilled a dry hole on the Bedwell & Lucas farm, NE Section 21, Jefferson Township, Sullivan County. C. W. Scott is drilling No. 6 C. L. Davis farm, Section 14, Turman Township, same county.

In Daviess County, Ben D. Ruble found a dry hole on the Thomas M. Lambe farm, Section 27, Harrison Township, at 747 feet, and is drilling on the Home Building & Loan Co.'s farm, SE Section 27, same township.

Elberfield Gas & Oil Co. is drilling No. 1 Henry Henke farm, NW Section 28, Greer Township, Warrick County, and unknown parties report a dry hole on

(Continued on Page 65)

FIFTEEN COMPLETIONS IN THE EAST; MEDINA COUNTY, OHIO, LEADING WORK

By Staff Correspondent

PITTSBURGH, Pa., Nov. 16.—The upper country field, the Bradford, Pa., and Allegany, N. Y., districts, has been restricted to 80 per cent production in a recent order of the Crude Oil Conservation Board of the Pennsylvania Crude Oil Producers Association. All other districts of the Pennsylvania grade crude producing fields remain unchanged at full production. In the Bradford and Allegany districts, the sands are repressured by a heavy head of water and it was not thought possible at the time the proration schedule was withdrawn that the full production would be so easily regained. At the present time that field is producing in excess of the amount needed and from its location with respect to refinery markets considerable crude stocks were being built up. At the present time there are over 30 wells drilling in those districts. A meeting will be held later this month of the lower country producers to consider the production figures from those districts.

During the past week in the three fields of the lower eastern fields there were 15 completions and 3 dry holes reported. The completions consisted of eight gas wells and seven producers with an initial production of 69 bbls. Since the lifting of the curtailment, a few more producers in West Virginia have been completed.

SOUTHEAST OHIO

Four oil producers and two gas wells were completed in southeast Ohio. The shallow drilling in Medina County accounted for half of the work and most of the new production. In this county, E. R. Edson & Son Co. completed another fair producer of the Morris A. and Eva Franks farm in Lot 20, Section 16, Chatham Township. It was their No. 29 and reached the pay at 481 feet. After shot it produced 30 bbls. the first day. The same operators completed No. 25 on the George W. Packard No. 1 lease, Lot 4, Section 13, same township. It made 2 bbls. the first day after shot and from a depth of 380 feet. On Lot 3, Section 13, Chatham Township, the Oko Oil & Gas Co. completed No. 49 on the Henry Essing farm to a depth of 370 feet. It made 10 bbls. the first day after shot.

The remaining producer completed was Richard Graham and others' No. 2 in the pool located in the southwest quarter of Section 17, Island Creek Township, Jefferson County, and on the Thomas Mills farm. It is a Berea sand well at a depth of 1,250 feet which produced 5 bbls. the first day after shot. This location is about 600 feet southwest of the test on this farm. These operators are preparing to drill on the J. A. Blackburn farm next as there appears to be room for several more locations for small pumpers in this pool.

In Perry County, the Atha Oil Co. completed a test on the B. Lemasters farm in the northeast quarter of Section 16, Madison Township. It was drilled in the Clinton sand at a depth of 3,240 feet and is a gas well rated at 200,000 feet a day. There was no showing of oil in this sand. The other gas well was the test of the Hopewell Fuel Gas Co. on the Leonida Meek farm, Lot 37, Wash-

(Continued on Page 65)

Personal Paragraphs About Oil Men

James J. Filas, representing the Acme Steel Company, Chicago, was a recent visitor to Tulsa.

* * *

J. C. Clifton has been appointed assistant district manager of sales of the Union Oil Company at Los Angeles.

* * *

Elrich H. Dobie, with the Dutch Shell Oil Company in Java, Dutch East Indies, is on his way back to the United States.

* * *

Dr. Arthur Wade, petroleum consultant, continues to make satisfactory progress in a London nursing home, after his recent operation.

* * *

Pierre Schon, sales engineer, General Motors Truck Company, Pontiac, Mich., attended to business in Dallas, Tex., during the week.

* * *

J. R. Schwabrow, petroleum engineer with the U. S. Geological Survey, has been transferred to the Casper, Wyo., offices from Shelby, Mont.

* * *

W. C. Condit, research engineer, Sun Oil Company, has been transferred from the Marcus Hook, Pa., plant to the sales department in New York City.

* * *

William K. Hughes of St. Louis, Mo., is spending a few days in Denver. Mr. Hughes is a director and vice president of the Reiter-Foster Oil Corporation.

* * *

Karl C. Schuyler, president of the Kinney-Coastal Oil Company, has returned to Denver after an extended trip to New York and other eastern cities.

* * *

E. L. Jones, district geologist for the Shell Petroleum Corporation in San Angelo, Tex., has resigned his position and has moved to California.

* * *

W. A. J. M. van Waterschoot van Der Gracht will be at 1742 N. Street, N. W., Washington, D. C., this winter.

* * *

H. T. Morley, geologist, has been made division manager of the exploration department of the State of Texas for the Stanolind Oil & Gas Company.

* * *

Hale B. Soyster, supervisor of the mineral leasing division, U. S. Geological Survey, has left his Casper, Wyo., offices for Salt Lake City and from there will go on to California on business.

* * *

Oliver H. Shoup, Colorado Springs, Colo., formerly governor of Colorado and president of the Midwest Refining Company, has organized a new company to build an independent refinery in Colorado.

* * *

Norman Hardy, formerly with the Standard Oil Company, Los Angeles, Calif., is now with the Nederlandsche Uacific Petroleum Maatschappij, Batavia, Java, Dutch East Indies.

* * *

Dana Hogan, manager of lands for the Petroleum Securities Company and vice president and manager of the Los Nietos Producing & Refining Company, is giving up active service with the Doheny organizations after 19 years. He intends spending an indefinite time in Europe.

* * *

Frank Anderson, Michigan state oil and gas well inspector, whose office headquarters are at Mount Pleasant, has left for northern Michigan to hunt deer. Before coming to Michigan Mr. Anderson held various positions with different oil companies in the West.

* * *

The Nobel prize for chemistry for 1931 will be divided between the two German scientists, Dr. F. Bergius and Prof. K. Bosch. Doctor Bergius developed gasoline out of cheap coal. Doctor Bosch is credited with having developed a means for utilizing Haber's synthetic ammonia process on an industrial scale.

C. C. Musgrove, Dallas representative of the Texas Creosoting Company, Orange, Tex., was in Tulsa last week.

* * *

J. L. Shakeley, vice president of Frick-Reid Supply Corporation, has returned from a business trip to Pittsburgh, Pa.

* * *

H. M. Van Sweringen, representing the Chicago Railway Equipment Company, Chicago, is on a trip through the Southwest. He stopped off in Tulsa for a few days.

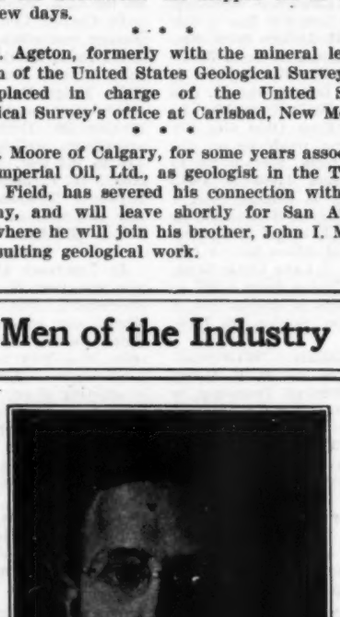
* * *

R. S. Ageton, formerly with the mineral leasing division of the United States Geological Survey, has been placed in charge of the United States Geological Survey's office at Carlsbad, New Mexico.

* * *

P. D. Moore of Calgary, for some years associated with Imperial Oil, Ltd., as geologist in the Turner Valley Field, has severed his connection with that company, and will leave shortly for San Angelo, Tex., where he will join his brother, John I. Moore, in consulting geological work.

Men of the Industry



A. W. Ambrose

A. W. Ambrose, recently made assistant general manager of the Empire Companies, entered the service of that organization in 1923 as manager of the geological and land departments. He was made manager of the production division in April, 1925, and was elected a vice president of the Empire Gas & Fuel Company and its subsidiaries in April, 1930.

Following his graduation from the Lodi, Calif., high school in 1908, Mr. Ambrose entered Stanford University, receiving his Bachelor of Arts in 1914. He was awarded the engineer of mining degree in 1920. He was assistant in the Stanford geological survey in the summer of 1914. From 1914 to 1917 he was geologist with the Shell Company of California. In 1917 he was for a time with Pomeroy & Hamilton in Houston, Tex. From 1918 until he joined the Empire Companies in 1923 he was with the U. S. Bureau of Mines, serving in various capacities including chief technologist and later assistant director in Washington, D. C.

Mr. Ambrose is a member of the American Institute of Mining and Metallurgical Engineers, the American Petroleum Institute and the American Association of Petroleum Geologists and has held important offices in these organizations. He is a member of the Cosmos Club of Washington, D. C.

L. B. Raugh, representing the National Anitine & Chemical Company, Inc., Chicago, was in Tulsa last week.

* * *

C. A. Prichard, purchasing agent of the Mid-Continent Petroleum Corporation, has returned from a trip to Texas.

* * *

Charles R. Rider, vice president of Drilling & Exploration Company, Inc., is now making his headquarters in East Texas.

* * *

R. L. Hague, vice president of the Standard Shipping Company, a subsidiary of Socony, has arrived in Los Angeles for a brief sojourn.

* * *

John T. Cumbie, Rocky Mountain representative of the Magnolia Petroleum Company, has returned to Denver, Colo., from a trip to Texas.

* * *

A. A. Weymouth, geologist with the Standard Oil Company of California, has been transferred to the Denver, Colo., offices of the California Company, a subsidiary.

* * *

Charles S. Jones, vice president of the Rio Grande Oil Company, has returned to his Los Angeles office following a business trip of several weeks' duration spent in New York.

* * *

A. C. Rubel, manager of field operations, Union Oil Company California, was the principal speaker at the monthly dinner meeting of the Petroleum Accountants Society held in Los Angeles recently.

* * *

Dr. L. Edeleanu, of Bucharest, well known throughout the world of petroleum science, and the inventor of the Edeleanu system of oil refining, celebrated his seventieth birthday a few days ago.

* * *

Sidney H. Keoughan, president of the North European Oil Company, was a Denver, Colo., visitor the past week to witness the drilling in of the Colorado Associated Oil Company's well in Morgan County.

* * *

The marriage of Mrs. Silva Seargeant and James B. Robinson, both of Tulsa, was solemnized Sunday, November 8, at the home of the bride's parents in Carthage, Mo. Mr. Robinson is a tank gauging engineer in Tulsa.

* * *

R. R. Templeton, vice president of the Pacific Western Oil Company, together with the staff and personnel of that company, has moved headquarters from the Petroleum Securities Building to the Richfield Building, Los Angeles.

* * *

R. M. McCalley, consulting engineer of Tulsa, has opened a Denver, Colo., office and formed a partnership with F. C. Roberts, formerly with the Midwest Oil Company, and C. O. Dillard, for many years associated with the group of companies operating the Salt Creek Field.

* * *

Miss Margaret Brown Clements and William Sherrick McCray of Owensboro, Ky., were united in marriage in St. Paul's Catholic Church in that city on November 4. Mr. McCray is connected with the Illinois Pipe Line Co. and is a son of W. F. McCray, superintendent of the Kentucky division of the company.

* * *

R. N. Parks, of Charleston, W. Va., who for a number of years has been superintendent of the gasoline properties of the Virginian Gasoline & Oil Company, a subsidiary of the Columbia Oil & Gasoline Corporation, has been promoted. Mr. Parks will have entire charge of construction, maintenance and operation of all gasoline absorption plants belonging to Columbia Oil & Gasoline Corporation, which embraces the properties located in the states of Ohio, Kentucky, Pennsylvania and West Virginia. Mr. Parks will also have charge of the sale of gasoline and other products in that territory.

Natural Gas Industry Developments

GAS PRESSURE ORDER IN WASHINGTON, D. C.

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Nov. 16.—The Public Utilities Commission of the District of Columbia has issued its expected order authorizing a gas pressure range of 3 to 8 inches of water, thus concluding a long drawn out controversy between gas consumers and the Washington Gas Light Co. Incidentally, this action will make necessary the purchase by the company of from 25 to 40 gas pressure installations of a design that has not yet been decided on.

The testimony introduced during recent hearings indicated that low gas pressure rather than high pressure, as was repeatedly charged, is "responsible for much trouble, annoyance and possible danger to consumers and is the cause of numerous complaints." These complaints made necessary many adjustments on gas bills which it was claimed were erroneous because of the high pressure made necessary in some parts of the city.

The Washington Gas Light Co. did not ask for this high pressure order but it did present testimony indicating that a pressure as high as 10 inches would be desirable. The commission sets forth that the daily variation in gas pressure shall not exceed 2½ inches at any gauge station during a day nor shall it exceed 50 per cent of the maximum pressure at the outlet of the service pipe to any consumer.

The company is instructed to install pressure gauges on or before December 1, the type, number and locations to be approved by the commission. The commission's instructions to the gas company follow:

"All available evidence, including the considered opinion of the experts of the U. S. Bureau of Standards, indicated that low gas pressure is responsible for much trouble, annoyance and possible danger to consumers and is the cause of numerous complaints. It further shows that with higher pressures, within limits of course, the efficiency of the gas flame increases, more heat units are delivered in less time.

"Tests have shown that when appliances are adjusted to any particular pressure, variations of pressure up or down of as much as 50 per cent will not make necessary further adjustments.

"It is not feasible to supply gas to the appliances of consumers at an absolutely uniform pressure, but if conditions in the future make it practicable, the authorized variations of pressure may be further limited.

"The flow of gas, the height of the flame and consequently the amount of gas used can be readily controlled by the use of the burner cocks. No matter what is the allowable pressure it is always necessary in the cause of economy and efficiency to regulate the gas flame by means of these burner cocks whenever such are part of the gas-consuming appliances. All gas users should manipulate these burner cocks in such a way as to secure the desired results with the measure of economy which is under their own control.

"In the case of pilot flames of oil burners and water-heating apparatus, if these have not been adjusted to the gas pressure now allowed, such adjustments should be made at once.

"With the gas pressure limits now authorized by the commission, it is believed that the interests of consumers are adequately protected, while the company can at the same time operate efficiently. Should there be any failure on the part of the company to maintain pressures within the authorized limits, the commission will take steps to enforce the appropriate remedy."

SOUTHWEST GAS SALES CONFERENCE DISCUSSES HEATING AND COOLING

HOT SPRINGS, Ark., Nov. 17.—The second Southwest Natural Gas Sales Conference sponsored by the American Gas Association commercial section was held at the Arlington Hotel this week. Trade and dealer co-operation, house heating by gas and gas refrigeration were the main topics of discussion. Among the speakers on the program were: R. W. Curran, president, Arkansas Utilities Association, Little Rock, Ark.; Paul Renshaw, Memphis Power & Light Co., Memphis, Tenn.; E. J. Hatzenbuehler, Lone Star Gas Co., Dallas, Tex.; H. D. Ittner, Texas Public Service Co., Austin, Tex.; Walter H. Lane, Oklahoma Natural Gas Corp., Oklahoma City; Willard G. Wiegel, Lone Star Gas Co., Dallas, Tex.; A. E. Higgins, American Gas Association, New York; E. C. Whitcomb, Lone Star Gas Co., Dallas, Tex.; J. G. Tooker, Wichita Gas Co., Wichita, Kans.; P. C. Tucker, Arkansas Power & Light Co., Pine Bluff, Ark.; C. B. Wilson, Southern Cities Distributing Co., Shreveport, La.; F. E. Sellman, Electrolux Refrigerator Sales, Inc., New York; C. C. Baker, Oklahoma Natural Gas Corp., Tulsa.

Central plant house heating in the southwest district was discussed by E. C. Whitcomb, Lone Star Gas Co., Fort Worth, Tex., who said:

"Every section of the country has its individual problems in house heating. It is doubtful, though, if any district presents a greater diversification than that of the Southwest. The scarcity of basements is, of course, an obstacle, and with this, too, often goes the lack of adequate flues and in some cases their complete absence. These constructional obstacles, coupled with an extremely wide fluctuation of temperature plus the lack of general acceptance of central heating, are only a few of the many difficulties confronting the house heating engineer and his sales force.

"Nearly everyone uses gas—it is the cheapest fuel—but this one complains about the bills, that one about condensation and another one of odor. A clearer understanding of the general types of heating by all company employes is needed and would help to straighten out these troubles. It is too much to expect that a few trained heating men can convey to all the thoughts of proper heating. The term proper heating is not used as applying simply to central plant heating, but to gas utilization for all types of home heating.

"Because we live in a district that enjoys a fairly high average yearly temperature is no reason we should suffer or lose the convenience of using the entire house when subnormal temperatures prevail, for we do encounter them. When this happens, it is surprising the number of homes affected and the semihibernating conditions which prevail until warmer weather returns. Architects and contract builders must be brought to see the advantages and necessity of properly laid out and installed heating equipment. If they cannot be prevailed upon to actually

(Continued on Page 67)

GAS FOR WELLS, MINN.

MINNEAPOLIS, Minn., Nov. 14.—Natural gas is now being piped into the State of Minnesota by the Northern Natural Gas System, the gas coming from all of the major pools in Texas, Oklahoma, Kansas and Wyoming. The line is now just south of Owatonna and is a 16-inch welded pipe line on an air line from Mason City, in the direction of Minneapolis and St. Paul.

The first city or town in Minnesota to actually receive and use natural gas will probably be Wells, a town of approximately 1,800 people, which town has granted a franchise to the Peoples Natural Gas Co., a subsidiary of the Northern Gas System pipe line and the contract for building the mains in the city of Wells has been let to the American Gas Construction Co., C. I. Tenney, president. It will be the first strictly natural gas distribution system in the State of Minnesota and it is expected that natural gas will be turned into the mains at Wells before January 1.

KANSAS GAS RATES

TOPEKA, Kans., Nov. 16.—The Public Service Commission has approved initial rate filings of the Kansas Pipe Line & Gas Co. for Kansas consumers it expects to serve in the near future in Barnes, Haddam, Mahaska, Belvue, Morrowville, Rossville and Silver Lake. The approved rate is $1 for the first 1,000 feet consumed monthly and 50 cents for the next 19,000 feet.

The commission also approved a similar rate filed by the Ellis County Gas Co. for Ellis and by the Central Kansas Gas Co. for Hays, and a rate of $1 for the first 1,000 feet, 70 cents a thousand for the second 1,000 feet and 60 cents a thousand for the next 97,000 feet, filed by the Western Natural Gas Co. for Anthony.

BUY PIPE AND FRANCHISE

SOMERSET, Ky., Nov. 14.—Beecher Smith and H. W. Young bought the pipe belonging to the Kengreen Gas Utilities Co. in the railroad yards here and under the ground on several Somerset streets and the gas franchise awarded the Kengreen company by the city of Somerset. The price paid was $3,000. The property and franchise were sold at public auction by Sheriff A. T. Sears, special commissioner, to satisfy a judgment of $2,300 awarded Hugh Crozer against the Kengreen company in the Fayette Circuit Court.

DEMANDS INCREASED RATE

HENRIETTA, Tex., Nov. 16.—An increase in gas rates was requested here by the Community Natural Gas Co. An ordinance asking the increase was given to Mayor F. O. Moore by Chester L. May, vice president of the company.

The new rate calls for $1.50 for the first 1,000 feet, $1.15 for the second 1,000 and 70 cents per 1,000 for all over 2,000 cubic feet, as against the present rate of $1.18 for the first 1,000 and 67½ cents for all over the first 1,000 feet. The council had cited the company to appear at a meeting at which a reduction of the gas rate would be considered.

OPPOSE METER CHARGE

OSWEGO, Kans., Nov. 16.—The Oswego city council has sent a request to the American Gas Co. at Bartlesville, Okla., that a 75-cent a month meter charge be dropped. If this is not done, beginning with this month's bills, the council will take steps to call a city election to vote for a municipal gas distribution system, it was stated in a letter to the company.

LEAKAGE SURVEY SYSTEM DISCUSSED IN CANADA

CHATHAM, Ont., Nov. 14.—In a discussion of leakage surveys, before the Natural Gas and Petroleum Association of Canada at Windsor, Ontario, R. M. Shanks, division foreman of the Union Gas Co. of Canada, Ltd., Petrolia, said:

"If the leakage is excessive and we cannot find the trouble by walking, we check the line in sections. Our larger transmission lines are constructed with orifice meter flanges in the lines at suitable places and on the smaller lines we have connections left, so that we can connect positive meters with very little trouble. From a few days' checking we can soon figure the monthly leakage of a section and move the gauges, or meters, as the case may be, to the next section. In this way we can soon check up the whole line and find the weak sections. Then we make a more thorough inspection of the weak sections.

"The gas measurement system is also used very extensively on our low pressure plants. We connect large checking meters on all sections that it is possible to separate from the rest of the plant without affecting service. In mild weather cross lines can be cut off and a system worked out on a very large scale. All meters affected are read when the checking meter is installed and a few days afterwards they are read again. From this loss the monthly leakage can be figured for that section. In making these tests do not bag off cross lines and take a chance on gas going past it. Always make cuts and plug off. It takes more time and expense, but it is there for the next time.

"Through our efforts, in the past four years, our company has been able to reduce the total amount of gas lost by approximately 28 per cent and have reduced our percentage of gas lost by 5.4 per cent, in face of the fact that we have added during this time approximately 100 miles of transmission lines, varying in size from 4-inch to 10-inch, mostly of the larger size, and more than this amount to distribution lines."

Frank D. Howell, district manager, Brantford, Ontario, said unaccounted for gas may be roughly divided into the following classification: Errors in domestic meters; stolen gas; difference in volume due to temperature changes; losses incurred in blowing drips and during construction work; condensation; and leakage from mains and services.

"Analysis of distribution systems has shown that leakage from mains and services is the cause of our greatest loss. As in the case of transmission lines an odorant has been developed for use in locating leaks; ethyl mercaptan has had some favor in this connection. It has been found very efficient in making readily noticeable leaks in meters and house piping and the larger leaks in mains and services. It has the advantage of lower costs but in cases where the main is buried to any depth it is often necessary to revert to the shut-in or isolation leakage survey, which, although expensive, and in some cases slow, has nevertheless in the past shown some interesting and beneficial results."

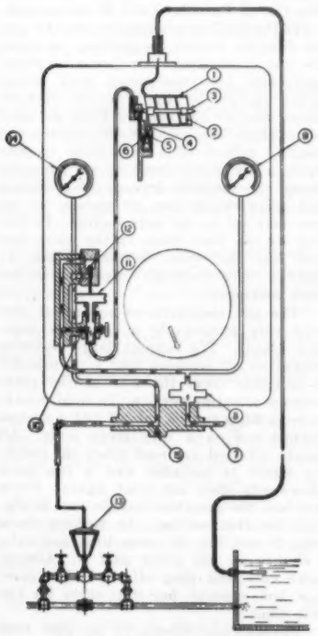
WILLIAMSPORT GAS RATE

WILLIAMSPORT, Pa., Nov. 16.—Mayor H. T. Ames announced after signing a protest city council entered before the Public Service Commission against new rates proposed by the Pennsylvania Power & Light Co. for supplying natural gas in Williamsport that he is considering sending representatives to Albany to attend hearings the New York Public Service Commission is conducting on the general question of gas rates.

Oil Industry Equipment and Supplies

INTRODUCES FREE-VANE RECORDER CONTROLLER

The Bristol Co., Waterbury, Conn., is offering a new line of air-operated recorder controllers, employing a "free vane" as the initiator of control, a new



departure. The free vane is attached to and actuated by a measuring element of a temperature or pressure recording system and moves between two air jets with stream lines coinciding placed opposite each other. In passing into these air streams the free vane varies the amount of air which escapes from the jets, thus effecting control.

The arrangement and design of the two jets and the free vane are such that the vane floats between two equal air streams at right angles to its motion, hence the position and movement of the measuring elements are not affected. The recording device is therefore free to reproduce the temperature or pressure with complete accuracy. Control from a frictionless device as described permits the use of supersensitive measuring systems. The component parts are easily accessible although compactly assembled. The point of control is easily set to a visible scale point by means of a key.

Referring to the illustration, the operation of the free vane air-operated recorder controller is as follows: Air at 15 pounds pressure is admitted through connection (7) and carried through filter (8), one branch leading to an indicating gauge (9). The other branch turns to the left and supplies air to the control system. This supply branch in turn divides into two branches. One passes through an orifice (10) supplying the elastic element (11) and then through a connecting line to the opposing jets (5) and (6). The other branch supplies air to the pilot valve (12) and through the pilot valve to the indicating gauge (14) and outward to the top of the diaphragm motor valve (13).

The air which enters through orifice (10) is dissipated through jets (5) and (6). The quantity which may be dissipated through these jets depends upon the position of the free vane (4). This vane, being directly attached to an elastic element (1) of the hollow helical type, is moved by changes in the temperature at the sensitive bulb shown in the bath at the lower right-hand corner. The changing amount of dissipated air at jets (5) and (6) produces a pressure change on the elastic element (11) and a consequent deformation which operates pilot valve (12) admitting more or less air to the top for operating the diaphragm motor valve (13). The elastic element (1) also carries the recording pen-arm which is attached to the shaft (3).

The free vane recorder controller is enclosed in a two-part cast-aluminum case of moisture-proof construction.

TOTCO DRIFT RECORDER HELPS TO MAKE STRAIGHT HOLE

Among recently introduced devices for increasing efficiency in oil well drilling by promoting straight holes is the Totco drift recorder. This instrument is the result of more than two years of intensive development work and research on the part of the engineers of the Technical Oil Tool Corp. with the co-operation of two of California's largest oil companies.

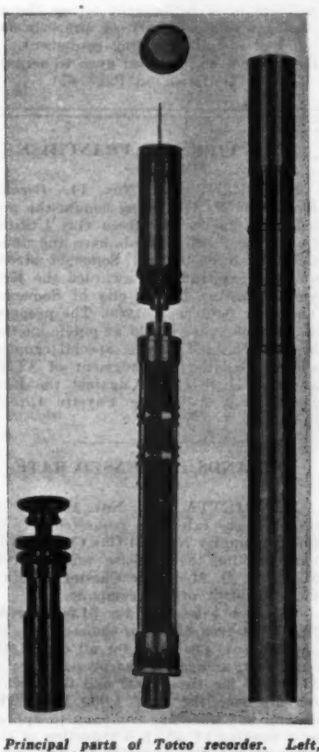
Outstanding features of the Totco recorder are said to be its accuracy, its simplicity of operation and the immediate availability of the drift reading to the driller on the rig and to the engineering force. These readings are taken instantaneously at the bottom of the hole and assure a marked saving in time.

In the Dominguez Field, California, over a period of two months, four Totco recorders, averaging two runs per instrument in each well daily, made over 400 recordings with only two readings in error. The cause of these erroneous records was rectified and it is said that not one error has been charged to the many Totco drift recorders in service since then.

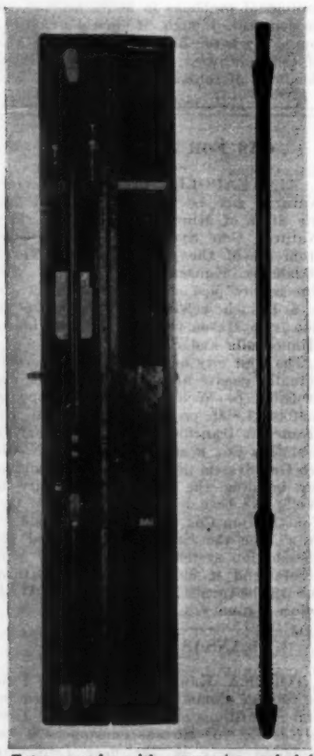
In running a Totco recorder a new chart is placed in the chart holder plug; the setting device is then turned to the time that the instrument is desired to make its record. The next step is to push the setting device down in the instrument and then pull it out. This action starts the timing mechanism in motion which causes the needle to punch a hole in the chart disc at the exact time for which the setting device has been set. The time at which the instrument has been set should be noted by watch so as to regulate properly the time on bottom. Then a chart holder plug is screwed into the body of the instrument, whereupon it is placed into a "go-devil" body; the lock plug is screwed into the "go-devil" body and the Totco recorder is then ready to be dropped into the drill pipe.

An important point about this device is that the drilling string can be rotated and circulation continued until one-half minute before the time that the instrument is set to make its record. At that moment rotation is stopped and is held stationary for one minute. The record is made and the mechanism of the instrument automatically locks in position. The drill pipe then can be brought out of the hole, bearing with it an immediate, permanent and easily read record of the drift from vertical.

The standard Totco drift recorder is furnished with recording discs which read to 10 degrees. A special attachment can be furnished to read as high in degrees as required, for unusual conditions. Additional details may be had by addressing the Technical Oil Tool Corp., Ltd., 350 South Bristol Avenue, West Los Angeles, Calif.



Principal parts of Totco recorder. Left, setting device; top center, chart holder plug with chart; bottom center, mechanism; right, mechanism case.



Totco recorder with accessories packed for delivery to well. Right, recorder in position in "go-devil" ready to be dropped into well.

NEILAN CONTROLLER IS SIMPLIFIED IN DESIGN

A new simplified pressure control instrument (nonrecording type) announced by Neilan Co., Ltd., 641 Santa Fe Avenue, Los Angeles, Calif., is made to con-

trol pressures accurately in ranges from zero to 5,000 pounds. It fills the need for a pressure controller where it is not imperative to make a chart record. It is, of course, less expensive than the recording controller and just as accurate.

The Neilan controller has been simplified in design so that the average plant operator can easily adjust or repair it. It embodies advanced features including the Neilan compound pilot valve and the sliding wedge actuating block which enables any degree of sensitivity to be obtained at any point on the instrument's pressure range. The case and many parts are made of duralumin which has the strength of aluminum. To prevent corrosion certain internal working parts are machined of stainless steel. A complete description is given in the new bulletin No. 2050, available on request.

BLOWOUT PREVENTER AND TUBING HEAD ANNOUNCED

The Hercules Tool Co., Tulsa, has placed on the market a tubing head and blowout preventer. This device is made with an ordinary casinghead with two 3-inch side outlets and threaded on the inside at the top, in which is screwed a packing bowl forming a water-tight joint. Three slips that encircle the tubing are inserted in the packing bowl for supporting the tubing. On top of the slips rest two special rubber rings with steel rings on top and bottom and compressed by a packing nut that screws into the top of the packing bowl, forming a semi-tight pack around the tubing. This packing can be replaced at any time without lifting the tubing or breaking the well connections.

Whenever it is necessary to run the tools into the well, this can be done by simply removing the top section or packing bowl from the casinghead, leaving a regular casing head with oil saver top on the well.

This tubing head is tested for 3,000 pounds pressure, and will support several times the weight of the longest string of tubing. Its simplicity of installation and its construction make it a most economical but serviceable and complete tubing head for well hook-ups.

The Hercules blowout preventer is tapered to fit down in the packing bowl in place of the slips. It is split on one side and can instantly be placed around the tubing and lowered down into the packing bowl. A collar on the tubing resting on top of the blowout preventer compresses it and packs off between the tubing and tubing head. Further information can be obtained from the Hercules Tool Co., P.O. Box 286, Tulsa.

The forty-second annual catalog has been issued by the W. E. Caldwell Co., Inc., Louisville, Ky., describing its tanks and towers of wood and steel.

Electric Weld

LINE PIPE

After years of study and research . . . . culminating thirty years of manufacture of quality steel pipe . . . . The Youngstown Sheet and Tube Company announces an Electric Weld Pipe. worthy of the name "Youngstown", in sizes 16 to 26 inches. / Youngstown Electric Weld line pipe has been in production for months. It is being announced to the gas and oil industry only after having passed the gruelling tests of actual line service where it has already been proved in performance.

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YOUNGSTOWN

FROM ORE MINE TO GAS LINE

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

OIL SCOUT'S PROSPECTS

I have been given to understand that the usual way and perhaps the best way to get into the oil business is to get a job as a roustabout and then work your way up to a foremanship or superintendency. I want to ask you if an oil scout has just as good opportunities for advancement as the man who starts in doing mechanical work. I am assuming that it is not necessary for the scout to be broken in as a roustabout first. I would appreciate some information as to just what the work of a scout covers and also along what line his promotions are likely to be.—D. O. N.

It has been said that scouting is the "classroom of the executive" and if a man is ambitious there is no doubt but that he can come up to positions of authority through that department as well as any other. As a scout the ambitious young man will come in contact with lease men, pipe liners, supply salesmen, roustabouts, gas men, gasoline experts, geologists, promoters, production superintendents, refinery men, pumpers and many others.

These contacts are valuable and if the young man has a retentive memory they will equip him with a practical knowledge of the oil business in its various interlocking activities that will fit him to hold a more important position in the affairs of an oil company.

The scout's work affords an unusual opportunity for recognition, in that many of the reports he will make are laid before the executives of the company, and such men are quick to recognize capable, intelligent and constructive reports and in it the ability of the man who makes them. Such recognition may lead to the scout being moved to positions of more responsibility or being assigned special duties that will still further give him opportunity to display his ability.

In general a scout's work will cover making reports both verbal and in writing upon new locations for wells, drilling reports, production reports, pipe-line reports, steel-storage reports, trades reports. Under the heading of special reports will come salt-water surveys, casinghead gasoline, refinery, steel-tank construction, tank-car shipments, acreage and lease plays and other details having to do with various branches of the industry.

The scout's advancement may be through land and lease department, to general office as department manager and from there to executive position, but the fact that his reports frequently go direct to the executive and are used in making decisions of major importance places him in an excellent position to attract attention and may lead to advancement in other ways.

H_2S PRESENTS PROBLEM

I have been advised that lapweld wrought iron tubing would give more satisfactory service in oil field work in this region than buttweld, that there would be less scaling and less corrosive action. The wells in this area are approximately 400 feet deep. There is very little rock pressure. The production is very small and the general practice has been to use from 1¼-inch to 2-inch tubing. The oil contains hydrogen sulphide gas, which has a corrosive action on the tubing. I would be glad to have an opinion as to the respective merits of buttweld and lapweld tubing for this field.—D.T.D.

You will find data applying to your problem in the bulletin issued by the U. S. Bureau of Mines No. 233 entitled "Protection of Oil Field Equipment Against Corrosion," by R. Van A. Mills; also in Dr. Frank N. Speller's book on "Corrosion, Cause and Prevention" issued by the McGraw-Hill Co., 370 Seventh Avenue, New York. Numerous articles have appeared in trade journals from time to time on this subject. Your particular problem is difficult to analyze without more data.

In his book on corrosion, Doctor Speller states in a chapter on influence of manufacture: "The effect of mill scale which forms on the surface of iron exposed to air at high temperatures is recognized as one of the most common causes of localized corrosion. * * * Since the scale is fluid at the welding temperature it forms a natural flux for welding and also protects the metal against excessive oxidation from the furnace gases. It is, therefore, a very essential factor in the welding of pipe; so much so that good welding steel is made so that it will readily form this fluid oxide at as low a temperature as possible, and thus be self-fluxing."

Testimony of men familiar with corrosion of tubing in West Texas wells tends to create a belief that it is not so much the difference in manufacturing process between buttwelded and lapwelded pipe that causes the trouble, but rather any one of many other factors that cause rapid corrosion of pipe in the presence of H_2S. It is really a problem for a chemist who can have access to all the conditions and knows from experience how to interpret them, but you can get many helpful suggestions from the books referred to. You might write Dr. Frank N. Speller, Pittsburgh, Pa., and outline your problem to him. He can give you good advice for he has personally made examination of tubing corrosion in many districts.

KETTLEMAN HILLS UNIT PLAN

I would like to know something about the unit plan of development in operation at Kettleman Hills. How many operators are participating in the plan? What are the essential features of it? How are the interests of a small operator safeguarded as compared to those of a big producer? To what extent and in what particulars do the different operators co-operate?—G. W. O.

The Kettleman North Dome Association is made up of 14 operating companies or individuals. The major companies in it, that is, members owning their pipe lines, refineries, etc., represent 32.12 per cent of the 10,800 acres comprising the land operated by the association. Fee lands amount to 1,160 acres; government A leases, 3,260 acres; government B leases, 6,260 acres, and permits, 120 acres. Besides this the association controls certain nonparticipating lands comprising 3,800 acres outside its limiting line. Strictly producing companies own 67.88 per cent of the 10,800 acres. The largest owner has slightly more than 23 per cent of the land under development by the association. The smallest has slightly less than 1 per cent.

Each member has one vote for each acre. Nine hundred sixty-eight acres are required to elect one of the 11 directors specified by the by-laws. Cumulative voting for directors is permitted. This allows three of the companies each to have two directors.

The association is a nonprofit organization. All funds are obtained by budgeted calls, whether for development, operation or other expense. The association does not own the land. It has merely contracted to take over the operating rights of the members. All of the physical equipment was purchased, including wells, drilling equipment, roads, pole lines, water wells and all appliances requisite to the operation of the properties. Gasoline plants, because owned largely by nonmember companies, were not included in the properties taken over on April 1, 1931. The facilities were bought and paid for by the association under one major call issued to the members.

One of the fundamental principles underlying the entire organization is that the crude oil, wet gas and gasoline belong to the individual members. The association acts merely as their agent to produce them, safeguard them and finally deliver them to or on the member's order. Dry gas, because of the difficulty of deliveries in kind, was considered as being owned by the association and, as such, is the only product in which the association has a financial interest.

The reasons for the members' insistence upon owning their share of the products lies in the desire for individual action. Some expected delivery in kind, others wanted the right to seek competitive markets. On the other hand the agreement provides that if a member is unable to find a market for his products, the association must dispose of them if he so requests.

In order to distribute the products equitably to the members, a standardized basis for computation had to be adopted. Government subdivisions of 640 acres and equal fractions thereof were selected. In some cases sections contain odd amounts, such as 656.36 acres. So far as the association is concerned, such a section is a standard 640-acre unit, and all acres have equal participation. Property lines have been eliminated and the products are allocated equally to each acre in the field regardless of where that product was actually produced. In other words, the oil, wet gas and gasoline are pooled. Dry gas contracts have likewise been pooled for the proportionate benefit of all members, except the Milham Exploration Co., which was given the right to receive the benefits of its own favorable contract, by reason of the fact that it was the discoverer of the field.

WHY WAS IT CALLED THAT?

CHECK MEETING

Check meeting is the name given to the gathering of oil scouts for exchange of information. Scouts assigned to a certain area by their various employers divide up the territory, each scout covering a part of it. At stated intervals the scouts meet and each gives the others the information regarding drilling, production, well logs, etc., which he has obtained. These gatherings for the exchange of data, along with such checking over as is possible, came to be referred to by the scouts themselves as check meetings and the designation now is in general use.

SELECTION AND CARE OF BELTS

Is there any practical difference in point of strength and general serviceability between a thick, narrow belt and a thin, wide belt if there is the same quantity of leather or other material in the belt? My own preference is for the wide belt. I do not think I get as much service as I should from the belts in our oil-field machine shop. I note that the edges seem to wear especially fast.—N. E. L.

"The success of a belt drive depends very largely upon a suitable selection of belt and proper installation and care," says "The Treatise on Leather Belting," published by the American Belting Association. "For a given cross-section narrow thick belts are to be preferred to wide thin ones; that is, a light double belt rather than wider single is more economical if the pulleys permit its use. Single belts over 8 inches wide should not be used. The narrower belts may be run on narrower pulleys, a distinct advantage in cases of overhung pulleys and stepped pulleys. Furthermore, narrower belts, especially if light doubles, run truer, stretch less and shift easier.

"Belt drives located in acid fumes where temperatures above 120° F. and high humidities prevail, or those installed in air charged with dust and grit, must be carefully selected and specially treated.

"Care must be taken in aligning shafting, as pulleys out of line cause an unevenness of strain across the belt, and, where flanged or stepped pulleys are used, there is danger of injury to the belt edge.

"The tension with which a belt is placed upon the pulleys is very important and for maximum service belts should not be installed too tight or too loose. If too tight there is excessive belt stretch, and the bearing loads are too heavy with consequent power losses and heating tendency. If too loose the belt will slip, thereby injuring the belt and reducing the power which the belt is capable of transmitting.

"Laced belts should have their ends cut square and evenly butted together. The lacing should be drawn equally tight, to prevent an uneven strain with a tendency to cause the belt to run crooked.

"Belts should be installed when possible with the slack side on top for all horizontal or inclined drives. Vertical drives, unless absolutely necessary, should be avoided."

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

VAPOR PRESSURE LEAN ABSORPTION OIL

Is there any recognized standard method used in taking vapor pressure on lean absorption oil? I wish to use the vapor pressure to predict the absorption efficiency of the oil. Kindly send me specifications as to the material used, size of the apparatus, temperature used in this work and size of the samples.—R.H.C.

There is no recognized standard method for determining the vapor pressure of lean absorption oil. The common practice for maintaining absorbing oil to a fixed quality is by means of a distillation test. The standard vapor pressure test (Reid) is for use when testing gasoline and naphtha, but would probably not be sensitive enough for finding the vapor pressure of lean oils.

All of the standard reference books on physical chemistry give the details of apparatus and methods for making vapor pressure determinations as employed in the investigations of solutions and pure substances. An apparatus and method not requiring complicated features is mentioned in Holde-Mueller, Hydrocarbon Oils, page 118, as follows:

"To determine the vapor pressure a Torricellian vacuum is prepared according to Kohlrausch in a tube of 1 meter length and 10 mm. diameter. The air is expelled from the mercury by boiling, the tube is then inverted in a trough of mercury. The height of the column is then read from a scale attached or by means of a cathetometer. An excess of the substance is then introduced by means of a curved pipette; the liquid, on rising to the top evaporates quickly, and in some cases violently. An excess of liquid must be present to establish equilibrium. The column of mercury is depressed and the height is again read; the difference between this value and the original gives the vapor pressure of the substance. By surrounding the tube with a jacket, the determination may be made at the temperature of steam or at the boiling points of other liquids. A correction must be made for the pressure exerted downward by the small excess liquid on the surface of the mercury. If s is the specific gravity, h is its height, then $\frac{(h)\ (s)}{13.6}$ must be subtracted from the difference in height of the two columns of mercury. At higher temperatures a correction must be made for the vapor pressure of mercury."

Usually very small quantities of liquids are used when making the determination, that is less than one cc.

SULPHONATION TEST FOR SPRAYING OILS

We have an inquiry for an oil which has a viscosity of 100/115 at 100° F. and a sulphonation test of from 57 to 65. Will you please advise just what is a sulphonation test and the standard procedure for making this test?—W. M. C.

The sulphonation test is one that has been devised in California for the grading of oils to be used in the preparation of sprays. Dr. de Ong states in Ind. & Eng. Chem., 22, 836, 1930:

"Unsulphonable Residue: This test in combination with viscosity, volatility and oxidation value has become the basis for the sale of practically all refined oils for plant spraying. It was at one time considered necessary to use oils of 98 to 100 per cent unsulphonated value, but this has been slightly modified, especially with the general use of less viscous, volatile oils. It should be noted that the unsaturates, aromatics and olefins are the more active insecticides and if small percentages of them can be retained and yet not endanger the plant, a more efficient spray results."

Directions for making the test may be found in State of California, Department of Agriculture, Special Publication 101, 1929-1930, page 10, as follows: Determine the specific gravity of the oil at 25° C. (77° F.) and weigh the equivalent of 5 cc. into a Babcock cream bottle (or A.S.T.M. Sulphonation bottle). Add slowly 20 cc. of exactly 37 N. sulphuric acid in four equal portions, shaking after each addition and taking care that the temperature of the mixture does not rise above 100° C. (212° F.) by cooling in ice water if necessary. When the temperature of the mixture no longer rises on shaking, agitate thoroughly, immerse the bottle in a water bath at 100° C. (212° F.) for one hour, shaking every 10 minutes for 10 seconds. Fill the flask with a strong sulphuric acid (Sp. Gr. 1.84) until the oil rises in the graduated neck, centrifuge to constant volume of the oil at approximately 1,500 revolutions per minute, cool to 25° C. (77° F.), read the volume of oil from the graduations on the neck of the flask and calculate the per cent by volume.

One method for preparing an oil of this type is given by Inman in Ind. & Eng. Chem. 21, 542, 1929, a part of which is abstracted. A distillate was oxidized and distilled to produce, as a condensate, a mixture containing alcohols, aldehydes, ketones and acids, saturated and unsaturated, both simple and complex, together with unaltered hydrocarbons. Sulphuric acid was added to this and the reaction mixture decomposed with water. This removed the excess acid and hydrolized a large part of the sulphonates and all of the sulphates. After settling, the dilute acid was drawn off. The product was then neutralized with sodium hydroxide and allowed to settle to remove the salt solution.

DIESEL FUEL FOR AUTOMOTIVE ENGINES

The recently developed Diesel engine for aircraft, making use of fuel oil, suggests that the same principle may be used in the automobile and gasoline displaced as a motor fuel. Have you any information regarding this possibility?—J.E.

The large Diesel engine of the stationary type utilizes oil of varying quality, it may be quite heavy and even contain some sand and water, and this facility for handling different grades of oil has built up a reputation crediting the Diesel with the abilty to make power from any sort of oil. This is true for the large heavy engine. The fuel problem at once attracted attention when the aircraft Diesel was first announced.

It appeared that the high pressures, as developed in the Diesel engine, would require a sturdy construction to withstand the stress and it appeared impossible to reduce the weight of the engine to the requirements of the aviation and automobile industries. An engine suitable for aircraft use must be capable of running at a much higher speed than the stationary engine, something like six times greater, operating at the rate of 1,400 to 1,600 r.p.m. Since the ignition time lag is substantially the same for both, it is clear that the high speed engine requires a different type of combustion than the low speed Diesel.

The principle of the Diesel engine is that the fuel is ignited by the high temperature of the air into which it is injected, the necessary temperature may be derived from the heat of compression or part of the air may be superheated by means of a hot spot. The temperature required for ignition being lowered by increase of pressure.

The important development included in the aircraft Diesel is that the ignition system of each cylinder is independent of the others, a nine-cylinder radial engine has nine individual ignition systems. The cylinders are capable of withstanding pressures in excess of 1,200 pounds per square inch, while construction weight has been reduced to less than 3 pounds per horsepower.

These features suggest that the quality of the fuel oil must have an important influence. Some of the oils used in the stationary type engine of sturdy construction would not function, the high flash point and the percentage of carbon being especially objectionable. The aircraft engine requires an oil that has undergone considerable refinement when compared with ordinary fuel oil. Several samples of this oil were found to fall within the limits indicated in the table.

Diesel Aircraft Fuel Oil

Gravity, A.P.I.	36-42
Flash, °F.	150-175
Viscosity, Say. Univ. at 100° F	48-56
Sulphur, per cent	0.05-0.4
Carbon residue	0.3-0.6
Water	none
Sediment	none
B.t.u. (40° A.P.I.)	19,850
Color	yellow-light brown

These analytical data indicate that the oil is a semi-refined distillate, an entirely different product from commercial fuel oil of low gravity, high flash point, high percentages of sulphur and carbon residue; in fact, the properties shown are those similar to kerosene. A distillate of this character may sell on the present market for less than gasoline; however, hardly less than 25 per cent off. The modern refinery is designed to produce the maximum yield of gasoline and if the market were suddenly changed to demand this kind of distillate in place of gasoline it would be impossible to supply it in the quantity necessary. The present difference in price is largely because of distributing conditions, the distillate being handled in bulk and the gasoline from filling stations; so if it became necessary to distribute distillate in a similar manner the retail price would without doubt be more than gasoline. The percentage yield of distillate could probably not be obtained to equal that of gasoline, because of the necessity of building up the simpler molecule instead of breaking down the heavier one, as is now done in making a very large part of the commercial gasoline. There seems to be no indication that gasoline will be replaced as a motor fuel for many years.

CLEANING TANK HYDROGEN SULPHIDE

While we were cleaning a tank, which had contained a high sulphur oil, two men were overcome, but we got them out and they were soon all right. However, in a short time there was an explosion inside the tank and it caught fire, but there were no lights of any kind anywhere near. The tank was thoroughly aired with all manholes open and one plate off for one day before the men entered the tank. Can you give an explanation as to what caused this?—P.T.K.

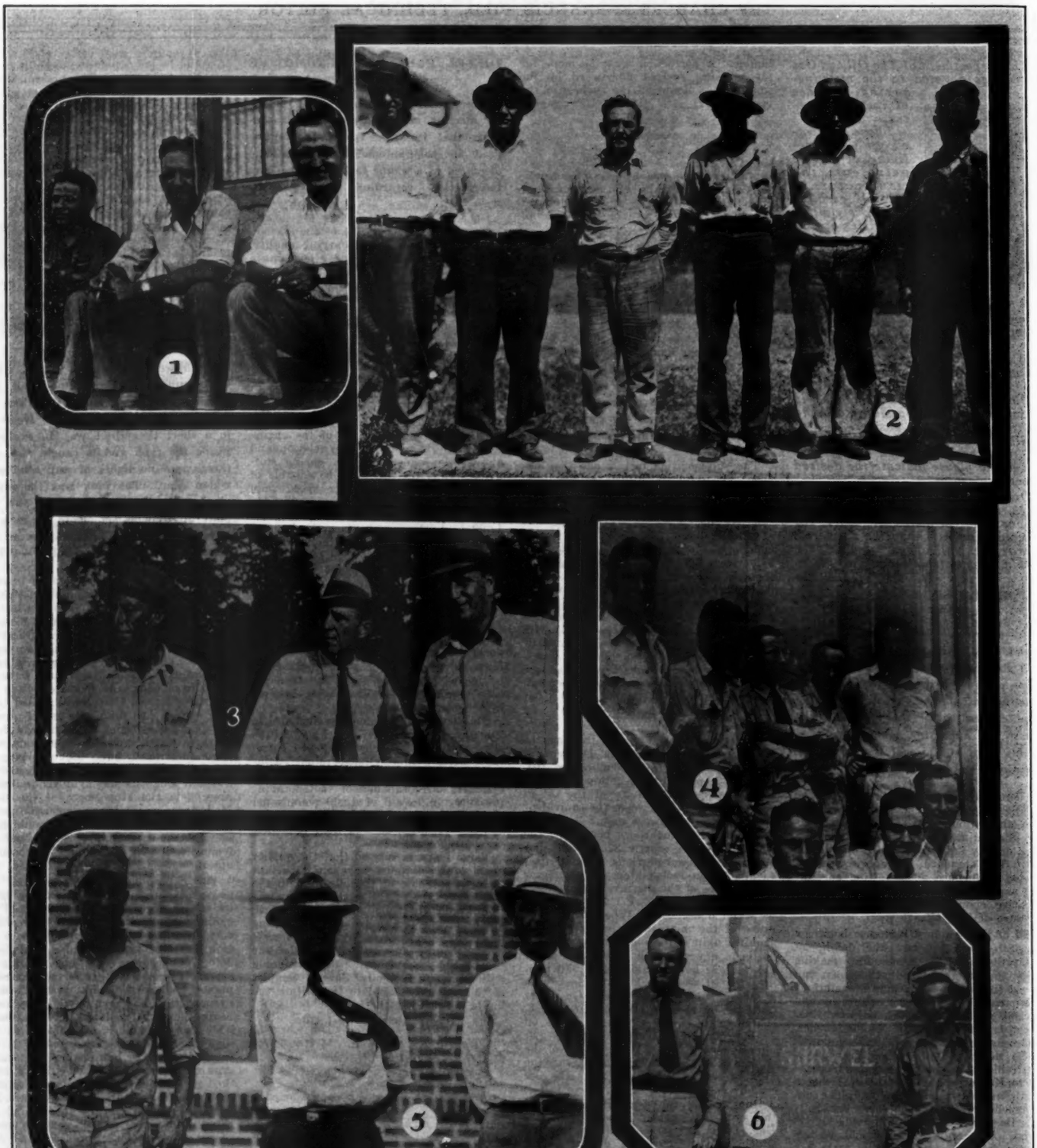
Petroleum vapors and the hydrocarbon gases are simple asphyxiants which do not act on a person with the sudden results of a dangerous substance like hydrogen sulphide. The hydrocarbon gases usually produce headache, nausea, dizziness and sleep or anesthesia. Hydrogen sulphide seldom gives any warning, aside from odor, and workmen often get used to that, so that men exposed to it long enough just drop over and if prompt relief is not at hand they are soon dead. With no further details, it appears that these men must have been working in the tank long enough to be affected by a small quantity of hydrogen sulphide present in the atmosphere of the tank. Had these men been rendered unconscious by petroleum gas, they would have no doubt had something to say about not feeling well long before the approach of anesthesia.

The explosion and fire confirms the above conclusion. Oils containing large quantities of hydrogen sulphide and organic sulphur compounds are exceedingly corrosive, the sulphur combining with the iron to form iron sulphide. This substance, under the conditions existing in several places about refineries, gasoline plants, and storage tanks in the field, is pyrophoric. The pyrophoric substances being those which ignite spontaneously. This iron sulphide is often found in the upper parts of tanks and towers in the form of masses or lumps, they are usually gray to black, but are sometimes brown. So long as these masses are wet or covered with oil they are of little danger, but when they are permitted to dry and are exposed to a draft of air they become a source of explosions and fires. If this tank was open for 24 hours, it may have been just about long enough for this deposit to begin to dry, come to a glow and set off the explosive mixture of hydrogen sulphide and air.

Simply opening a tank for 24 hours may not be long enough to free it of either hydrocarbon gases or hydrogen sulphide. Steaming or washing out with water is a much safer practice.

See the article by R. B. Roaper, Cleaning Sour Crude Storage Tanks, The Oil and Gas Journal, January 1, 1931, page 34.

Seen Here and There by The Journal's Cameras



1—V. V. McGrew, E. W. Sullivan and Lee Rogers, Frick-Reid Supply Corporation, Turnertown, Tex. 2—S. J. Dunlap, chief engineer, O. A. Milliken, master mechanic, O. W. Price, engineer, T. B. Taylor, dispatcher, E. H. Cook, engineer, and M. H. Fisher, machinist, Panhandle-Eastern Pipe Line Company Louisburg, Kans. 3—R. O. West, welding superintendent, M. Ulmer, general superintendent, and M. F. Kemper, president, all of Kemper-Harms Contracting Company, Tyler, Tex. 4—Upper row: R. C. Holmes, J. L. Patton, R. H. Weaver, Arch Clark, and A. C. Elkins. Lower row: W. M. Bills, J. G. Buvens, and K. Hillin. All with engineering department Sun Oil Company, Tyler, Tex. 5—Ralph Clifton, chief engineer, N. L. Lynch, district foreman, and Hugh Lambert, district clerk, Great Lakes Pipe Line Company, Paola, Kans. 6—George W. Ballew and Bill Stearns of Sperry Sun Well Surveying Company in East Texas.

CENTRAL WEST FIELDS

(Continued from Page 49)

the Downey-Coleman farm, SE Section 21, same township.

In Spencer County, I. A. Polhamus drilled a second test on the William Grass farm, NE Section 11, Huff Township, which is reported good for 25 bbls. from the Cypress sand formation. Hagedorn & Schlachter's No. 1 J. Haubschan farm, SE Section 35, same township, is estimated at 20 bbls. initially at 838 feet.

Dearborn Developing Syndicate's No. 1 Jacob Steinmetz farm, Section 2, York Township, Dearborn County, is reported making a fair gas showing and the same syndicate is drilling on the Jerry Nowlin farm, Section 34, Miller Township, same county.

Ivyton Oil & Gas Co. found a light gas well on the J. E. Brown farm, SW Section 2, Webster Township, Harrison County.

Two Rivers Oil Corp. found a light oil well with some gas in No. 3 Isaac Buzzard farm, in Salamonie Township, Huntington County, in the old Trenton Rock Field of the northeastern part of the State.

Charles E. Miller, trustee, is shut down on the George C. Morgan farm, SW Section 26, Washington Township, Pike County. H. A. Moore is also shut down at No. 2 Harley Craig farm, NE Section 19, same township. A. E. Davis and others are also shut down at No. 1 George P. Frank, Section 27, same township, just at the south edge of Petersburg.

Big Four Oil & Gas Co. is drilling No. 2 C. T. Sloan farm, SW Section 18, Washington Township, Gibson County. Wabash Public Service Corp. is drilling No. 3 George B. Allen farm, NE Section 22, Columbia Township, same county.

J. C. Christenson is drilling on his farm, 5 miles west of Medarysville, in Pulaski county, and the French Development Co. is drilling on the F. A. Reitzel, NW Section 8, Liberty Township, Hendricks County.

ILLINOIS

Only one completion was reported from Illinois, the Bryan Lee Petroleum Co.'s No. 1 William Lagewich farm, Section 4, Centralia Township, Marion County, from 1,612-17 feet, in what is termed the Chester series and estimated at 15 bbls.

In the Dupo Field, Sugar Loaf Township, St. Clair County, south of East St. Louis, but one well is reported drilling, Collins and others' No. 1 Walter heirs farm, Section 23, near Stocky.

In the wildcat development in Illinois, there are two wells idle in Randolph County, two idle in Monroe County, two idle in Madison County, and one each in Washington, Boone and Jefferson Counties.

Two wells are under way in Casey Township, in Clark County; one each in Coles and Edgar Counties. In Crawford County two rigs are up and three wells are reported under way.

In Central district, Section 16, Missouri, the Webster Oil & Gas Co. is drilling on the William Mild property for gas.

KENTUCKY

The Owensboro Field of Western Kentucky is looking up to some extent after more than a year. It may be a long time before the peak production of 15,000 bbls. daily pipe line runs is reached, but there has been a steady pickup for a few weeks, indicating the return to hunting new crude production. Approximately 6,000 bbls. daily are being gathered by the two pipe lines which serve the field. More than 25 drilling projects are now operating. Just now the excitement seems to be around the Barrett Hill section of northern Ohio County, where some good wells have been drilled in the past. Drilling now is chiefly in the shallow areas in which McLean and Daviess Counties are not contenders. In some parts of Hancock County one may get a well at 400 feet, occasionally at shallow depths, while the same thing occurs in parts of Ohio County.

Approximately 4,500 bbls. of oil is gathered daily by the Illinois Pipe Line Co., which serves all the territory, while the Producers Pipe Line Co. gathers approximately 1,500 bbls., which is limited to portions of Ohio and Daviess Counties.

Total runs made from wells served by the Illinois Pipe Line Co. in Western Kentucky during the month of October was 133,926.19 bbls.

The Logsdon Valley area of Hart County expects unusual activity. It is southwest of Mumfordville and northwest of the Legrande Pool that made the county a shallow oil field. Miles and others in the Legrande area have what shows for a 35-bbl. producer in No. 1 Theo. Smith farm. Norris and others' No. 1 White farm is also showing for 35 bbls. No. 1 on the McCorkle is rated at 30 bbls., and Pearson Petroleum Co.'s No. 1 Rowletts at 40 bbls. On an island in the Green River the Treasure Island Oil & Gas Co.'s No. 1, also in Hart County, is rated around 50 bbls., with No. 2 under way.

The Treasure Island Oil & Gas Co. recently filed papers of incorporation with headquarters at Mumfordville. The incorporators were Wiley Bowling, president; C. C. Bundy, vice president and general manager; W. H. Atteberry, secretary-treasurer; C. B. Larimore, A. S. Clever, Mr. Ham, William Rider, H. F. Mansfield, C. E. Sturgell, C. R. Carden and A. C. Wells.

No completions were reported from Ohio, Daviess and McLean Counties.

In Hancock County, a mile northeast of the Richards Pool, the Mecca Oil Co. drilled a dry hole in the northwest corner of the Easton & Fuqua farm at a depth of 600 feet.

In the Sebree Field of Webster County, George Christensin drilled in what is reported a 75-bbl. initial producer on the J. A. Curry farm, 3 miles north of Sebree, at a depth of 450 feet. Garrison & Baker's test on the J. E. Thornberry farm, 3 miles south of Sebree, in the same county, is reported with 1,500,000 feet of gas, while Iley Browning's test on the S. K. Sutton farm, 1 mile south of Sebree, is also a 1,500,000-foot gas well at a depth of 1,505 feet.

MICHIGAN

Two important Michigan oil pools are attracting attention, due to the large flowing wells found in the New East Pool, in Greendale Township, Midland County, and the Vernon Pool, in Isabella County. These wells remind the oldtimers of the early days in the Lima Field of northwestern Ohio and northeastern Indiana.

Three completions were reported, the largest being No. 2 on the A. J. Struble farm, owned by Walter L. McClanahan and others in the SW SE Section 10, Greendale Township, Midland County, just east of the ill-fated No. 1 Struble. No. 2 Struble with an open initial daily flow of 3,300 bbls. takes its place along with the record wells of the field, second only to the 3,600-bbl. No. 1 Bernard. The oil flow has been pinched down because of insufficient storage, and the fact that proration has been set at 500 bbls. day by the pipe line in the field.

On the Purtle farm, the tank farm of the Pure Oil Co. in Greendale Township, same county, the company's No. 2 flowed when brought in at the rate of 150 bbls. an hour and was reported to have flowed only a little less than 3,000 bbls. on a 24-hour run. The well is not being produced to capacity because of the proration schedule.

Another important strike has been made 6 miles east and 8 miles south of the wells on the A. J. Struble farm, the Pacific Oil & Gas Co.'s No. 1 Ottway farm, Section 26, Porter Township, Midland County, which topped the Dundee formation at 3,417 feet and when 50 feet in had a bad fishing job, but the tools were recovered and the well produced 150 bbls. in 12 hours and is easily good for around 200 bbls. or better, opening an entirely new region for development work.

The third completion is Walter L. McClanahan's No. 1 on the Waldron farm, north of Ashley, in Gratiot County, which ran into a heavy dose of water where the gas sand was expected.

Next completion due in the East Field is the Kalamazoo Improvement Co.'s No. 3 on the Hornick farm, Section 15, Greendale Township, Midland County.

The Simerall Pipe Line Co., pipe line division of the Roosevelt Oil Co., is extending its 4-inch main farther east to facilitate taking oil from the East Pool. Several new gathering lines also are being put in. New booster pumps also are to be installed on the line to speed up the conveying of oil from the field to Mount Pleasant.

New Permits

The Department of Conservation issued permits to E. S. Hammond of Mount Pleasant for Jess Graham and others' No. 1 well, 660 feet from the north and west lines of the farm, NW SW Section 22, Chippewa Township, Isabella County, and to C. H. Bigsby and G. R. Cunningham for No. 1 well, 330 feet from the north and west lines for the Geneva Oil Co., NW SW SE Section 15, Greendale Township, Midland County, in the New East Pool area.

Central Michigan

Development in the Mount Pleasant-Midland fields the past four months made a marked gain over the first six months of 1931, says the Isabella County Times-News:

"According to statistics compiled the past week 28 oil producers and 8 gas wells were brought in during July, August, September and October, as against 13 oil wells and 3 gas wells the first six months. At present there are 219 wells in the Isabella-Midland Field listed as oil producers and 21 gas wells. The bulk of the new oil wells were struck in Greendale Township, Midland County, about 3 miles east of the old proven Pure Pool. However, the No. 1 Woods in Vernon Township, Isabella County, set the early pace for big wells, making a 2,500-bbl. initial open flow. Later the record was equaled and then broken by wells in the East Pool in Midland County.

Development was just beginning in the new East Pool when July opened. Following a strike on No. 1 Hornick wildcat, drilling steadily increased and now the pool has 15 producers ranging in production on initial open flow from 700 bbls. to 3,600 bbls. The four months resulted in large expansion of proven territory to the east, and now wells are being drilled even farther east. Production has jumped from an estimated 10,000 bbls. daily to an estimated 22,000 bbls. daily.

The number of producing oil wells in Vernon Township was increased from 5 to 10, ranging from 200 bbls. to 2,500 bbls. a day. Two new gas wells also were brought in.

In Clare, Leaton and Broomfield development showed smaller gain, although should natural gas markets develop activity Clare and Broomfield might easily forge to the front, each pool having potential gas resources. The first market for natural gas was opened since July, the Consumers Power Co. building a pipe line from Broomfield to Midland and supplying the City of Midland, while the Gas Corp. of Michigan changed from artificial gas to natural gas in their Clare-Rosebush-Mount Pleasant system. At present a new 4-inch line is under construction by the local company from Mount Pleasant to the Vernon gas pool. The old 2-inch line proved inadequate to supply Mount Pleasant.

The second meeting of the newly formed Gas and Oil Producers Association of Michigan was held in Mount Pleasant. William Cline, Walter Lee McClanahan, George Pittle and Robert Tope were named as members of the executive committee to work with the officers.

Muskegon

In the Muskegon Field arrangements for cleaning out two wells of Bower & Lentz, Inc., on the Seiner Estate in Section 5, Muskegon Township, have been completed. The cleanout work will be supervised by G. E. Dake of the Paragon Oil Co. Both wells came in as large gassers when the field was at its height.

The Hesperia Petroleum Co. well, which was drilled to a total depth of 2,300 feet on the Walter Jones farm, NE SE Section 20, Denver Township, Newaygo County, will be deepened.

EASTERN FIELDS

(Continued from Page 49)

ington Township, Tuscarawas County. It was completed at 3,532½ feet, the Niagara Lime, and is showing for a 400,000-foot gas well.

WEST VIRGINIA

West Virginia reported six gas wells, three new producers with an initial production of 22 bbls., and three dry holes for the past week. Work in the oil areas in this state is mostly confined to the cleaning out of settled production but since the restrictions have been raised, there have been a few locations made for oil.

On the waters of Big Run, Sheridan district, Calhoun County, the Virginian Gasoline & Oil Corp. completed a second test on the Ida Shroyer farm at 1,795 feet and in the Injun sand. It is rated as a 10-bbl. producer, natural. In Wirt County, Clay district, Harold Daily and others completed two wells on the Thomas Lewis heirs farm. No. 5 was completed in the Macksburg sand and is showing for a 2-bbl. pumper, and No. 6 in the same formation is rated good for 10 bbls. a day initial. This farm is on the waters of Big Island Run.

Gas Wells

There were two gas wells completed in Boone County, one of which was a very fair well. In Sherman district, Godfrey L. Cabot completed his second test on the J. Q. Dickinson farm in the Maxon sand at a depth of 2,195 feet. It has been gauged at over 1,500,000 feet a day. The Pure Oil Co. completed its No. 54 on the Federal Coal Co. tract in Sherman district in the Weir sand at 2,656 feet. It is showing for a fair gas well.

In Calhoun County there was another test completed. In Sherman district Creed Barker and others drilled a test on the Glory Hathaway farm in the Injun sand to a depth of 1,955 feet. It will make a small gas well. In Sheridan district of the county, T. J. Crawley completed No. 4 on the William Cooper farm in the Injun sand at 1,895 feet. It will also make a small gas well. In Cabell County the B.C.K. Gas Co. drilled its test on the Ritzel Lucas farm in McComas district in the Injun sand to 1,454 feet and found no showing of gas. This well may be drilled deeper.

In Fayette County, Godfrey L. Cabot completed a second well on the Elkhorn Piney Coal Co. land in Kanawha district. It will make a gas well. In Putnam County, Wade Kirtley and others found the Injun sand dry in a test on the T. C. Erskine farm in Scott district and shut down. The well may be drilled deeper.

In Roane County, and on the waters of Cain Run of Reedy Creek, Reedy district, Boggess and Bartlett drillel their test on the Stella Sheppard farm in the Berea sand to a depth of 2,548 feet and found it dry. In Curtis district of this county the Reedy Oil & Gas Co. completed a very fair gas well in its second test on the A. J. Paugh farm. It is a Salt sand well at a depth of 1,716 feet and is rated good for over 1,500,000 feet a day.

Drilling in West Virginia

In Gilmer County there are three tests drilling and a rig up for a fourth. In Center district, O. E. Garrett and others are down 1,665 feet on the E. C. Frame farm, and D. W. Law and others have reached 1,460 feet on the Arnett Collins farm. In the same section, McCall and others have a fourth well drilling on the Fletcher Stout farm and it is down 1,660 feet. In DaKalb district, A. E. Ellis and others have spudded in and started drilling on the O. F. Gainer farm, and Frank Golden and others have a rig standing on the H. E. Engle heirs farm. In the same district, Clem Morris and others have reached 350 feet in a second test on the W. F. Roberts farm.

In Ritchie County there are several tests drilling. In Clay district R. W. Richard and others have their test on the John Goodwin farm drilling at 1,900 feet. In the same district Lucas and Mahaney are down 550 feet on the Mary

"They took a five-gallon bucket and punched it full of holes—"

This unusual test pointed the way to substantial savings on storage tank repairs and oil deterioration in tank cars

Petro-Seal is a new Sherwin-Williams Product that protects the interiors of tank cars, storage tanks and tank steamers from the corrosive action of crude oils and gas. It also prevents the formation in tank cars of the acids that discolor oils.

Its effectiveness may be judged from the following report of an experiment performed by a prominent oil company. "They took a five-gallon bucket, punched it full of holes with an ice pick and coated it inside with Petro-Seal, left this to dry overnight and then filled the bucket with crude oil. This was in July, and it is not leaking yet, after months."

By providing effective protection from interior corrosion, Petro-Seal eliminates the necessity of frequent repairs on storage tanks and prevents the deterioration of oil in tank cars. Maintenance costs are greatly reduced and leakage losses are cut down.

S-W Petro-Seal can help you solve one of the big problems in the oil and gas industry. Send for complete information and test results. THE SHERWIN-WILLIAMS CO., Cleveland, Ohio. The World's Largest Manufacturers of Protective Coatings.

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Farley farm. In Grant district the Hoover Oil Co. is drilling on the C. G. Bradley farm and has reached 1,720 feet. R. C. Jackson has a test drilling in the Rutherford heirs farm in the same district and it is down to the 1,500-foot level. In the same district H. N. Rinehart has a test on the T. E. Moore farm down 700 feet. In Murphy district W. H. Bickle has a rig standing on the U. S. Fluharty farm, and J. F. Deem has made a location on the T. N. Johnson farm. In the same district, C. B. Lewis and others has a rig standing on the W. P. Baker farm, and Godfrey L. Cabot has a location for one on the J. N. Eddy farm.

In Wood County Walter H. Bickle is drilling on the W. H. Bickle farm in Lubeck district and is fairly deep for this district at 2,840 feet. In Williams district the Warren Brothers are in the sand on the J. W. Reed farm at 1,255 feet. In the same district the Athey Brothers have spudded in and started a third well on the Susan Athey farm.

Marshall County

In Marshall County, G. B. and A. G. Patterson have a test drilling on the C. and A. B. Williams farm in Liberty district which is 1,200 feet deep. In the same district the Carnegie Natural Gas Co. has rigged up to drill a second well on the T. O. Johnson farm. In Harrison County the Philadelphia Natural Gas Co. is rigging up to drill a second test on the Hattie Smith farm in Sardis district. In Eagle district the Delaware Gas Co. remains shut down in its second test on the Reynolds heirs farm after reaching 2,400 feet with no report.

In Monongalia County there are four tests drilling. In Battelle district the West Penn Gas Corp. is drilling at 2,500 feet on the Charlie Taylor farm, and Eddy and Johnson are down 1,700 feet on the Owen Hennon farm. In Morgan district, S. W. Meals and others have spudded in and started drilling on the George S. Davidson farm. In Clay district, no further progress has been made on the Pedlar Run Oil Co. test on the Lewis R. Hess farm which remains shut down.

In Kanawha County, which remains somewhat active though with the peak off the work, the Pure Oil Co., the Winifrede Co., the Cannelton Coal Co. and Godfrey L. Cabot continue work on their well-tested properties with little else of interest. However, in Union district Ellison and Wilson are drilling on the Virgil C. Tate farm, which at present is drilling at 1,675 feet. In Elk district, Grosscup and others have reached 3,860 feet on the Samuel M. Burdette farm without making a completion. In the same district the Kendall Oil & Gas Co. has made a location for No. 5 on the Frank J. Kendall farm.

SOUTHWEST PENNSYLVANIA

The Southwest Pennsylvania fields continue very inactive and again failed of any completions during a week's operations. In Greene County the Philadelphia Natural Gas Co. has a test on the Olive B. Stevens farm at the 800-foot level. This is in Whitely Township. In Perry Township, the same company is down 600 feet on the A. B. Wade farm. In Wayne Township the H. D. Freeland test on the D. T. Freeland farm is nearing completion, being down 3,142 feet.

In Allegheny County the Scheid Carey Co. is drilling on the R. Kennedy farm in Pine Township and has reached 1,400 feet. In McCandless Township the E. A. Bream Oil Co. has No. 6 on the Wallace heirs farm down 1,200 feet. In Washington County a local syndicate has a test on the A. Woodruff farm, Chartiers Township, drilling at 1,570 feet, and in South Franklin Township the second test of Bungard & Co. on the R. C. Clark farm is down to 850 feet.

No further reports of any interest have been made on the wildcat test of the Dunn Mar Oil & Gas Co. and the Consumers Fuel Co. in Fayette County, nor is there anything further to present on the American Natural Gas Co.'s new test in Somerset County.

CONFERENCE DISCUSSES HEATING AND COOLING

(Continued from Page 53)

incorporate proper heating, they should at least provide adequate flues properly located and carried to sufficient height above the roof as to be serviceable as well as providing for proper gas outlets, both as to location and size. Much closer working arrangements must be brought about with the heating contractor. The speculative builder needs a plan whereby he can include heating in the house he builds. This is possible in various ways and, if carried through properly on a sound policy, we will find that ultimately this type of builder will come to look upon heating equipment being as necessary a part of the houses he builds as the foundation.

"Central heating is confined to the higher priced homes. Can we be content with this? I do not think so, for these homes represent a small percentage of our true potential. The great majority of our customers live in homes of seven rooms or less, and most of them are of single-story construction with absence of basements prevailing. Heating conditions in this average home are far from comfortable. Space heaters are generally used and frequently one encounters a heater with 20,000 B.t.u. input struggling away to heat a room 15'x20' with 9-foot ceiling, three exposures, plenty of glass and perhaps a surplus of outside doors with windows and doors leaking cold like a sieve, and as for wall infiltration, the less said the better. Now what happens? Cold floors, condensation on walls, ceiling and windows, frequently to such an extent that water drops to the floor and forms into ice.

"How about the comfort in such a room? As we enter, a hot blast of murky air strikes us in the face. We step inside with a feeling of being suffocated. Upon being seated, we shortly discover that at the head or breathing line we are burning up, while at the waist we are fairly comfortable, but those cold feet we brought in are still cold and becoming more so. How can so many degrees of discomfort exist in one room? From the shoulders up we are about to pass out from overheat, while those cold feet continue suffering for want of some of the surplus heat. Is it any wonder that people living under such heating conditions frequently protest their gas bills? 'I couldn't have used that much gas, for I haven't had my house comfortably warm this month.' Quite true, sad and most unnecessary. A little assistance from someone acquainted with heating methods could do so much in curing these conditions. Space heating, properly applied, affords very satisfactory and economical heating, but those selling space heaters must remember that rooms do vary in size as well as the capacity of heaters, and to see that the heaters they sell are adequate to meet the demands that will be put upon them.

"We need not stop for lack of basements. If there is no basement, let us get along without it, but let us heat these homes properly just the same. Why not take our furnace into the attic, place our cold air registers in the floor and our warm air outlets in the ceiling. This, of course, requires a fan, but with the silent fans available today, it affords no real obstacle. While we are about it, why not turn our heating plant a little farther upside down and introduce our cold air into the top of the furnace, taking it out of the bottom? Impractical or impossible, you say. Perhaps, but I doubt it. While we are getting a little wild, let us become even more so and stay out of the attic. Let us concoct a nice, trim, little insulated case for our furnace and fan (or leave the fan in the attic), and place our heating plant at the rear of the house, carrying our hot and cold air ducts over and below or both below, as you may desire. Plants of this character could be installed at prices to compare very favorably with basement installations.

"Construction with heat inlets in the ceiling and cold air returns in the floor can be developed into a very successful method of heat distribution. The well-known gravity system must through necessity produce high ceiling temperatures in order to have a comfortable temperature at head heights and lower. This means coldest air at the floor line right where the most heat is needed, for it is an established fact that with heated floors a much lower room temperature may be employed and still be very comfortable. With an overhead introduction system, the air travel is all toward the floor and more even temperatures are bound to be had at all room heights with a very noticeable reduction in ceiling temperatures.

"Those who prefer radiator heat need not be deprived of it simply because they live in a one-story home. The boiler can be placed in a small room or on the back porch at floor level and the flow line carried above the ceiling with a return line under the floor. This provides a very satisfactory hot water system. It can be bettered considerably, though, by introducing a pump, no larger than those employed in the circulation system of most automobiles. Current consumption on such a pump is about equal to a 40-watt lamp, and when connected with the thermostat makes an ideal forced circulation system.

"The problems of our customers who already have heating systems installed in which other fuels have been employed, and it is desired to change to gas, must be handled individually. A survey must be made and it determined if the system is in proper condition. Frequently, it is found that recommendations must be made and assistance given in putting the plant into proper shape for it is absolute folly to ever hope to cure mechanical ills through the mere application of gas."

The Southwest market for gas refrigeration was discussed by F. E. Sellman, Electrolux Refrigerator Sales, Inc., New York, who said he believed the Southwest is a natural market for gas refrigeration.

"Practically every year from 1913 on a new make of gas refrigerator was tested. It was not until 1926 when the Swedes came over with their Platen-Munters refrigerating system and offered it for sale in this country to the highest bidder that the era of gas refrigeration began. The Swedish machine which originally was brought to this country was designed and built for use with electric heat. It fell to the task of the American engineers to redesign this electrically operated refrigerating unit into one for gas operation. With the able assistance and help rendered by engineers of some of our larger gas companies this was accomplished. Along with the conversion of the unit itself to gas operation, equipment such as gas burners and gas thermostats had to be developed. There were none available and, furthermore, the gas industry knew practically nothing of the kind suitable for this purpose.

"Today there are in the neighborhood of 100,000 gas-operated refrigerators rendering excellent service in the metropolitan New York area. A recent canvass made by an agency indicated that less than one-tenth of 1 per cent of the present Electrolux users would be willing to change to some other make of automatic refrigerator. In this territory most retail sales are attributable to recommendations of satisfied users.

"During 1929 the number of units sold was 47,862, while during 1930 the figure rose to 57,508. Indications are that during 1931 the sales will exceed 80,000 gas refrigerators.

"From time to time, remarks have been made that it is very difficult to sell and service gas refrigerators in the Southwest. One or two gas companies have proven that this is not so, especially in New Orleans where we have a dealer, who, incidentally is not a gas company and who has put out on gas company lines nearly 2,000 gas refrigerators. This shows that where sales and proper service are given, and where there is a will and desire, great things may be accomplished.

"The real drawback in the Southwest would be the indifferent attitude of the gas companies due primarily to the low revenue which they feel the gas refrigerator will give them but it must be clearly brought to the front that the public desires the most economical type of refrigerator and any utility, in order to keep the confidence of its public, should be able to furnish the cheapest and most economical type of service to that public.

"During 1930 and 1931, the lean years of depression we find a marked decrease in the sale of water heaters, gas ranges and other gas appliances. Gas refrigeration, on the other hand, steadily mounted."

C. C. Baker of Oklahoma Natural Gas Corp., Tulsa, spoke on the problem of merchandising proper appliances.

"In order for a representative to accomplish the most for his company he should give full co-operation to all departments and try to realize the importance of each rule of the department, and in return each department should do all it can to make the road as easy as possible for the representative. Unless co-operation is the keynote the work will be doubly hard and he has much less chance of winning the customer's confidence when trying to adjust complaints.

"Due to a new law in Oklahoma and some few other states it is now necessary for gas companies to do their work through the merchants' sales organization. Since the gas company has very little control over this new system, it then becomes a super selling job for them to see that these organizations are properly instructed so that the utility will obtain proper representation. To properly educate the indirect selling organization along the lines of utilities service and policies the gas company representative visits the merchants, helps in their morning meetings and also goes out on sales or service calls with their salesmen.

One of the greatest helps given has been a heating school held once a week by a competent heating engineer, employed by the gas company. The interest shown at these classes conducted by my company has been very gratifying. Both salesmen and company will profit from this study."

MICHIGAN FIELDS

(Continued from Page 48)

ty, Greendale Township, Section 26, NE NE NE, and No. 1 Rheimenschnider, same township, Section 14, NW NW NE, which are locations both south and east of the proven field and are regarded as semitests for the extension of the pool, are expected to be completed within the next week. Walter Lee McClanahan is the operator of the Solms Brothers well and Strange & Weller are operators of the Rheimenschnider well.

One drilling permit was issued by the state conservation department the past week. It is for a location on the Wille farm, Isabella County, Broomfield Township, Section 4, made by the Pure Oil Co. The Pure Oil Co. has three natural gas wells in the same section of Broomfield Township at the present time, No. 1 Wille, No. 2 and No. 3, No. 1 being gauged at 8,800,000 feet, No. 2 at 1,250,000 feet and No. 3 at 2,700,000 feet.

14-CENT TAX IN IRELAND

NEW YORK, Nov. 16.—The New York Herald-Tribune, in a copyrighted wireless dispatch from Dublin today, says:

"An emergency budget raising the Free State income tax from 3 shillings to 3 shillings 6 pence (from 56 to 66 cents at the present exchange) on each pound and doubling the present gasoline tax to 8 pence (14 cents) per gallon was passed by the Dail Eireann today.

"Finance Minister Ernest Blyth, who introduced the measure, estimated that the increased revenue produced from these taxes would total £450,000 ($1,692,000), leaving another £450,000 to be met by retrenchment of public services to be announced later."

F. M. BROODER DIES

Frank M. Brooder, for many years manager for the Dallas Dome-Wyoming Oil Fields Co., died at the Bishop Randolph Hospital at Lander, Wyo., following a paralytic stroke. He was 55 years old and a Spanish-American war veteran.

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OKLAHOMA FIELDS

(Continued from Page 33)

tal of approximately 290,000 bbls. from the indications of the gauges that have been secured to date. The only large decline in the present potentials from the former potentials was found in the Konawa and West Asher Pools. The gauging of the entire area is expected to be completed around the first of the month. Only two of the areas have completed their potential tests, Allen and Sasakwa Pools. Both of these pools registered a slight decline over the estimates submitted by the statewide proration committee to the Oklahoma Corporation Commission.

Incomplete reports from some of the pools in the Greater Seminole indicate that the area is holding near the estimated 3 per cent decline which was figured for several months prior to the taking of new potentials tests. The entire Greater Seminole area is taking new potentials which are being witnessed by representatives of the Oklahoma City Field operators.

The first completed potential tests were from the Allen Pool which shows a potential of 18,825 bbls. a day, while under the estimated 3 per cent decline curve the gauge was 18,320 bbls. a day. The Sasakwa Field shows a potential of 2,695 bbls. a day compared to the estimated potential of 3,283 bbls. a day.

The old Earlsboro Pool, for nine days' gauging, shows an average of 24,300 bbls. a day, compared to a total of 25,370 bbls. under the decline method. Earlsboro Townsite for nine days shows a gauge of 3,300 bbls. a day compared to 3,720 bbls., the decline estimate.

Seminole City Pool, the discovery area in the Seminole Field, shows an increase over the 3 per cent decline estimates. For eight days it averaged 24,300 bbls. per day compared to the estimate of 23,060 bbls.

East Seminole area for eight days averaged 2,600 bbls. a day compared to 2,424 bbls. under the decline estimate.

St. Louis Pool averaged 35,000 bbls. a day for eight days, which was an increase over the estimates of 32,590 bbls. a day. West Asher-Wanette area for five days averaged 8,500 bbls. a day while on its last potential gauge taken August 1, 1931, it showed a potential of 29,396 bbls. compared to its last potential on August 1, of 22,636 bbls. The Konawa and West Asher areas are the only pools that show a substantial decline.

Plug Back Deep Test

The deepest hole in the United States is to be plugged back and the showings found in the upper horizons tested. This is the Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s No. 6 Preston-Culp, NW cor. NE, Section 6-5-9w, on the west side of the Cement Pool in Caddo County. The total depth is now 10,079½ feet. The 6-inch casing was cemented at 9,777 feet and since that time the crew has been unable to get the tools back to the bottom of the hole.

The owners plan to plug back and test a number of showings, several of which are believed to be good enough to make a commercial producer. Accidents and fishing jobs at the test caused the operators to believe that special equipment is necessary if deeper drilling is to be attempted. The bottom of the hole is in the Pennsylvania formation.

Deal in Old Production

During the week the Carter Oil Co. sold approximately 520 acres of stripper production, covering six leases in Okmulgee and Muskogee Counties with 54 bbls. a day production to Homer Lamb of the Red Bank Oil Co., Tulsa. The properties are: SW NW, Section 3-14-14, with 9 bbls. production; N half NE, Section 3-14-14, with 8 bbls. production; SW, Section 26-15-14, with 14 bbls. production, all in Okmulgee County. The Muskogee County properties are: N half SW, Section 15-14-16, with 14 bbls. production; E half SW, Section 22-14-16, with 4 bbls. a day production; S half SE, Section 22-14-16, with 5 bbls. a day production.

Greater Seminole Production

The production from the Greater Seminole area for the week ending November 14 was approximately 176,655 bbls. This is a large increase over the previous week's gauges due to the taking of potentials. The first 12 pools listed below comprise the Seminole area which averaged 112,740 bbls.

Pool—	Bbls.
Little River	15,728
East Little River	4,871
Carr City	31,431
Maud	1,646
Mission	5,396
Bowlegs	9,849
Earlsboro	19,332
South Earlsboro	3,545
East Earlsboro	12,270
Seminole	13,230
East Seminole	3,161
Searight	3,190
Total	112,740
Allen	17,871
Asher	725
Wanette	6,796
Konawa	8,910
Sasakwa	2,446
St. Louis-Pearson	26,760
Total	176,456

The daily production from the Oklahoma City Field for the week ending November 14 was as follows:

Date—	Prod.	Wells
November 8	233,907	121
November 9	145,664	9
November 10	213,726	180
November 11	174,745	180
November 12	130,066	91
November 13	139,606	99
November 14	162,468	111

Creek County

Gled Oil Co.'s No. 1 McGee, NE cor. NW NW, Section 36-19-8, is a machine rigging up. C. O. Buckles and others' No. 2 Coonrod, SE cor. NE SW, Section 3-19-9, is rigging up. F. R. Billingsley and the Riverland Oil Co. moved a rig in for No. 2 Wayman "B", SW cor. NE NW, Section 22-15-8. The Texas Company's No. 7 Weaver, NE cor. SE, Section 13-19-8, has been completed for 200 bbls. in sand at 2,238-83 feet after a shot of 180 quarts. Gled Oil Co.'s No. 1 Hinton, SE cor. NE, Section 26-19-8, has been abandoned at 2,387 feet. Hoover & Windsor's No. 1 Kirby, NE cor. NW SW, Section 36-19-8, is dry and abandoned at 2,600 feet. C. O. Buckles and others' No. 1 Bruner, NE cor. SW SW, Section 3-19-9, has been abandoned at 260 feet. J. E. Wallace and others' No. 1-A Fulsom, SW cor. Section 7-17-11, is dry and abandoned at 2,317 feet. F. R. Billingslea and others' No. 1 Wayman, NE cor. SW NW, Section 22-15-8, has been completed for 75 bbls. after shooting with 20 quarts in sand at 2,800-58 feet.

Grady County

Joe Anderson has the slush pit dug for No. 1-C John Wilde, NE cor. SE SE, Section 28-3-5w.

LeFlore County

Sooner Oil & Gas Co.'s No. 1 Johnson, NE cor. Section 30-6-26, is spudding.

Marshall County

J. L. Dixon and others' No. 1 McDuffee, SW cor. SE, Section 3-7s-6, is dry and abandoned at 1,105 feet.

Muskogee County

E. Price moved a machine in for No. 1 Spaulding, NE cor. NW NW NE, Section 9-15-18. Western Development & Engineering Co.'s No. 3 Fields, SW cor. NW SE NW, Section 9-15-18, is a machine. Mack Drilling Co.'s No. 3 Peterson, NW cor. SE SW NW, Section 34-16-15, has been completed for 50 bbls. in sand at 1,141-80 feet. R. B. Hash and others' No. 1 M. Barnett, NE cor. SW, Section 34-16-15, has been abandoned at 1,178 feet.

Stephens County

George Pace and others' No. 13 McMasters, NW cor. NE, Section 13-2s-8w, is dry and abandoned at 2,035 feet.

Osage County

Peters Petroleum Corp. and others' No. 1 NE cor. SE, Section 27-27-11, is a machine rigging up. P. E. Voyles is moving a machine in for No. 4, SW cor. NE, Section 3-25-8. W. H. Twyman and others' No. 1, SW cor. SE NW, Section 32-22-8, is dry and abandoned at 2,327 feet in Bartlesville sand topped at 2,288 feet.

Pawnee County

Peter Adamson, Jr.'s No. 1 Ice, SE cor. NE, Section 4-20-8, has been completed for 10 bbls. in sand at 1,565-70

ec. Charles Cornet's No. 1 Pierce, NE or. SE SW, Section 20-20-10, made a 0-bbl. pumper in sand at 1,846-83 feet fter plugging back from Bartlesville sand t 1,986 feet.

Wagoner County

D. Clawson and others' No. 1 W. Por-er, SW cor. NE NE, Section 7-15-17, s spudding. R. A. Godfrey and others oved a machine in for No. 1 S. Kernal, NE cor. SW NE, Section 7-15-17. The Braman Oil Co.'s No. 1 F. Colbert, NW or. SW, Section 32-18-17, has been com-leted for 1,500,000 feet of gas in sand t 1,022-40 feet.

TIGHTEN REGULATIONS IN TAX COLLECTIONS

In order to tighten the gasoline tax ollection machinery the Oklahoma Tax Commission has made several amend-ents to its regulations effective imme-iately.

The first major change provides the anner by which gasoline distributors may obtain credit on their monthly re-ports for motor fuel sold tax-free for agricultural purposes.

The seller in this case now must exe-cute a claim form, transmit it to the distributor, who, in turn, sends it to the tax commission, taking deductions on the monthly tax report. The responsi-bility is fixed near the source of the sale, Cornish explained.

A second amendment concerns the pay-ing of the gasoline tax to the tax com-mission by distributors licensed by the commission. Posting of the licenses at place of manufacture and refining, and at all points of distribution, is required "so the public may ascertain who is re-sponsible to the state for payment of the excise tax," Cornish said.

The third new regulation is in ref-erence to the motor fuel sold for agricul-tural purposes, and provides a definite manner of completing the sales ticket to be filled out and signed by the purchaser of such fuel.

Purchasers are required to keep their copy of the form for inspection by the tax commission.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 34)

rachel et al's No. 1 Bersuch, NW SE NW, Sec. 16-17-7.. Fishing 915 ft.
Hankerson et al's No. 1 Cessman, SW SE, Sec. 24-16-9.. S.D. 2,625 ft.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 22-34-43w ..... T.D. 3,640 ft; temp. abd.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w ..... Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW, Sec. 21-14-15.... S.D. 2,958 ft.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Weaver, SE cor., Sec. 3-2-25w.. S.D. 3,925 ft.

RICE COUNTY

Cress et al's No. 1 Sharp, SE NE, Sec. 13-20-10w ..... Show oil 3,107-15 ft; Silicious 3,-330-36 ft; estimated 1,500 bbls.; shut in.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW, Sec. 17-19-16w ..... Show of oil in Conglomerate 3,825-30 ft; plugged back to 3,825-40 ft; estimated 150 bbls.; S.D.

RUSSELL COUNTY

Agate O. & G. Co.'s No. 1 Rochfellow, SE cor., Sec. 6-13-12w ..... S.D. 3,506 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W½ NE NW, Sec. 20-13-4w ..... Drlg. 2,400 ft. by casing.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW, Sec. 27-7-26w ..... S.D. 3,495 ft.

STAFFORD COUNTY

Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE, Sec. 11-24-31w ..... S.D. 3,560 ft.

STEVENS COUNTY

Argus Prod.'s No. 2 Christopher, C NE, Sec. 16-33-35w.. S.D. 5,521 ft.

SUMNER COUNTY

Tighe et al's No. 1 Thieson, C NW SE SE, Sec. 22-34-2... S.D. 2,550 ft.
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW, Sec. 6-34-2 ..... S.D. 2,300 ft.
Spencer et al's No. 1 Porter, NE SW, Sec. 12-33-5w..... Drlg. 4,080 ft.

WASHINGTON COUNTY

Wilcox et al's No. 1 Penwell, NW SE NE, Sec. 16-3-3.... S.D. 1,720 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 33)

KIOWA COUNTY

Christian's No. 1 Jones, NE SE, Sec. 8-7-12w ..... S.D. 820 ft.

LATIMER COUNTY

Choctaw Oil Co. No. 1 Fitzgerald, C NW NW, Sec. 1-6-22.. Rig.
P. English's No. 1 Unknown, NW SE, Sec. 16-6-19 .... S.D. 1,542 ft.

LINCOLN COUNTY

Hilton Phillip's No. 1 Phillips, SW NW, Sec. 2-14-2 .... Drlg. 3,650 ft.
Mote et al's No. 1 School Land, NW cor., Sec. 36-17-5 .. Drlg. 900 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE, Sec. 32-9-16 ..... Drlg. 5,803 ft.

MURRAY COUNTY

Capitol Prod. Co.'s No. 1 Cutchall, SE NE, Sec. 6-1-2 .... S.D. 2,425 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE, Sec. 21-11-19 .. S.D. 1,011 ft.

OKFUSKEE COUNTY

Shepard et al's No. 1 Nevens, SE NW SW, Sec. 3-12-10.. S.D. 3,638-90 ft; Wilcox sand; hole full wtr.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor., Sec. 21-11-3w ..... S.D. 1,200 ft.
A. C. Hivick's No. 1 Sunset Addition, NW SW NW, Sec. 17-11-3w ..... S.D. 5,515 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW, Sec. 6-20-5 ..... S.D. 1,950 ft.
Cochran et al's No. 1 Green, NE cor. SW, Sec. 15-23-5.. Rig.

PITTSBURG COUNTY

Tapo Oil Co.'s No. 1 Fulton, SE, Sec. 34-7-14 ..... S.D. 1,200 ft.
J. Morrison's No. 1 Fowler, NE SE, Sec. 13-7-17..... Rig.
C. Kennedy's No. 1 Travis, C SW NE, Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor., Sec. 14-8-14 ..... Rig.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW, Sec. 23-13-24w .... C.S. 5,150 ft.
A. C. Hivick's No. 1 Davis, C NW NE, Sec. 4-11-26w .... Drlg. 3,355 ft.

SEQUOYAH COUNTY

Braman Oil Co.'s No. 1 Unknown, C NW SW, Sec. 29-12-22 ..... S.D. 1,137 ft.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor., Sec. 29-8-19w ..... Drlg. 2,638 ft.; show oil 2,459-67 ft.
Burns & Prince's No. 1 Deck, SW cor., Sec. 21-8-18 .... S.D. 1,140 ft.

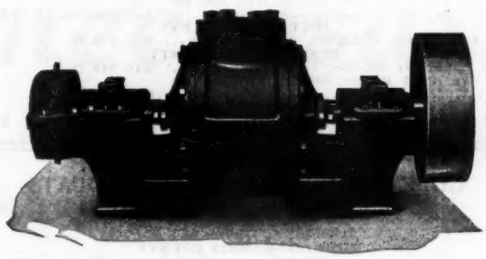
OKLAHOMA PANHANDLE

TEXAS COUNTY

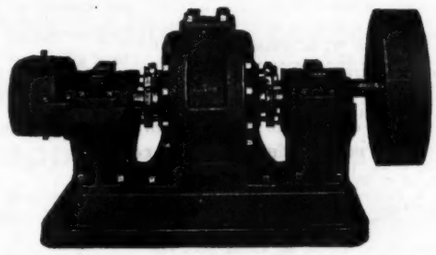
Three Way Oil Co.'s No. 1 Crane, SW NW, Sec. 11-1-1E.. Cementing 4,685 ft.

R-C-W PUMPS

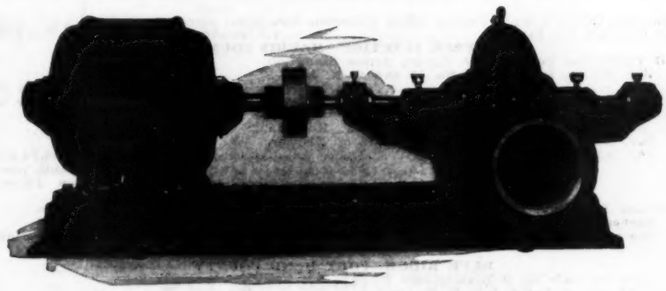
—For Every Pumping Requirement Around the Refinery. Write for Details



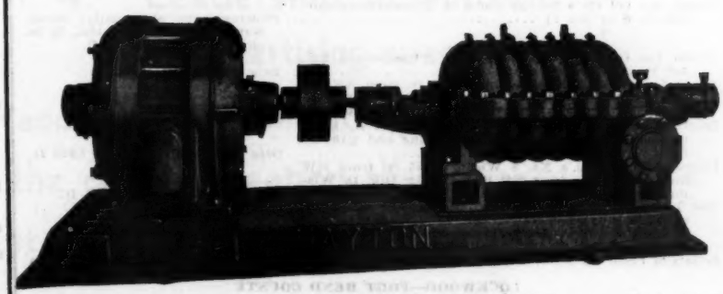
Type "F" Cycloidal Pump With Two Lobed Impellers



Type "F" Pump With Three Lobed Impellers



Centrifugal Single Stage Double Suction Pump



Multistage Centrifugal Pump

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SOUTHERN OKLAHOMA

ATOKA COUNTY

Morris et al's No. 1 Mansell, SW NW NW, Sec. 9-2s-12 .. S.D. 285 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE, Sec. 18-3s-10 .. S.D. 1,530 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW, Sec. 7-7-10 .. T.D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor., Sec. 35-6s-9 .. T.D. 740 ft; plugged back to 450-80 ft.

CHOCTAW COUNTY

Hobson Bros.' No. 1 McChristian, NW NE NE, Sec. 12-4s-19 .. S.D. 730 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE, Sec. 15-4s-8w .. Location.

LOVE COUNTY

Van Vleck No. 1 Sheldon, NE SE NW, Sec 14-8s-24 .. Drlg. 540 ft.
Autrey et al's No. 2 Cross, CWL SE NE, Sec. 27-6s-2 .. Show oil and gas 970-72 ft. and 1,224-34 ft; S.D; T.D. 1,624 ft.

MARSHALL COUNTY

Everette et al's No. 1 Agres, SE NE, Sec. 14-7s-6 .. Drlg. 755 ft.
Summers-Sellers' No. 1 Beams, NE SW NE SW, Sec. 30-7s-5 .. Rig.
Dixson's No. 1 McDuffel, SW SE, Sec. 3-7s-6 .. Show oil 791-828 ft.; T.D. 1,096 ft.; plugging back to 828 ft.
Taliaferro et al's No. 1 fee, NW SE SE NW, Sec. 34-5s-5 .. Landing csg.; T.D. 580 ft.

McCURTAIN COUNTY

Stewart's No. 1 Patterson, C SE SE, Sec. 7-6s-24 .. S.D. 756 ft.

PUSHMATAHA COUNTY

George's No. 1 Lane, NW SE, Sec. 32-3s-15 .. S.D. 840 ft.
Whitehead et al's No. 1 Messer, SE SW SW, Sec. 35-3s-18 .. S.D. 200 ft.

STEPHENS COUNTY

Brown's No. 1 Hightower, SW SE NE, Sec. 15-3s-5w .. Sand 990-1,004 ft; S.O.; S.D.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 38)

HUMBLE—HARRIS COUNTY

Southern Coastal Oil Co.'s No. 3 Perkins, John Jones Sur., 150 ft. N of No. 2 .. Derrick.
Sun Oil Co.'s No. 25 Bender, W. B. Adams Sur., 1,155 ft. from C of R.R. on an extension of the N line of the Bender North Addition and 8 ft. S .. Salt 3,268-98 ft.; plugged to 2,850 ft.; set 111 ft. of 4½-in. screen; to pump.
Sun Oil Co.'s No. 26 Bender, W. B. Adams Sur., 310 ft. W, 20 degrees N, of No. 25 .. Drlg. gumbo 505 ft.
The Texas Company's No. 37 Koehler, J. B. Stevenson Sur., 717 ft. E and 603 ft. S of NW cor. of SW Fee tract .. Drlg. hard sand 2,785 ft.
The Texas Company's No. 46 Stevenson fee, 1,630 ft. N and 1,690 ft. W of SE cor. of J. B. Stevenson Sur. .. Drlg. sticky shale and lime 3,242 ft.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 1 Polk-Kuhn-Glass, 260 ft. E and 1,545 ft. S of SW cor. Marshall Beauchamp Sur., in the T. J. Notgrass Sur. .. Drlg. water sand 5,159 ft.
The Texas Company's No. 3 Kuhn, 587 ft. S and 150 ft. W of NE cor. of the Mary E. Hall Sur. No. 2 .. Location.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 62 Davis, M. Young Sur., 400 ft. NE of No. 19 and 600 ft. SE of No. 57 .. Rig.

HULL—LIBERTY COUNTY

Republic Prod. Co.'s No. 144 Dolbear, Jesse Devore Sur., 250 ft. W of No. 97 and 200 ft. SW of No. 99 .. Total depth 1,852 ft.; drill stem stuck.
Wenecedan Oil Co.'s No. 2 Palmer, Chas. Underton Sur. .. Set screen 2,225 ft.
Sun Oil Co.'s No. 10 Carr .. Sandy shale showing oil 1,864 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Production Co.'s No. 33 Taylor, James Hamilton Sur. No. 52, 300 ft. E of No. 33 and 50 ft. from S line .. Set 2 joints 6⅝-in. screen 3,836 ft. with full string 6⅝-in. liner to top; swabbing.
Rio Bravo Oil Co.'s No. 22-A Settegast, J. Kopman Sur. No. 44, 900 ft. S and 200 ft. W of NE cor. "A" lease (D.D.) .. Set 30 ft. of 4⅝-in. screen 4,311 ft.; comp. flowing 500 bbls. pipe line oil through open 2½-in. tubing; 25 lbs. pressure.
Southern Petroleum Co.'s (Tilton et al) No. 1 N. C. Barnes, B.B.B.&C. Sur. No. 1,028, 15 ft. from N line and 25 ft. from W line of Blk. 49, Jones Subd. .. Coring sand and shale showing oil 3,931 ft.

BLUE RIDGE—FORT BEND COUNTY

Coronado Oil Co.'s No. 2 Blakely, 430 ft. W, 575 ft. N of SE cor. of Lot 8, Blk. D, E. Drew Sur. .. Rig.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 20 Cade, N. Fitzsimmons Sur., 161 ft. W of No. 15 and 146 ft. SW of No. 17 .. Shut down 60 ft.
Yount Lee Oil Co.'s No. 22 Cade, N. Fitzsimmons Sur., 125 ft. S of No. 21 .. Flowing 1,200 bbls. daily; comp. Nov. 1 flowing 400 bbls., ¼-in. choke; sand 5,133-93 ft.
Yount Lee Oil Co.'s No. 23 Cade, N. Fitzsimmons Sur., 300 ft. S of No. 22 .. Drlg. sandy lime 4,415 ft.
Yount Lee Oil Co.'s No. 24 Cade, 1,010 ft. from NE line and 1,250 ft. from NW line of N. Fitzsimmons Sur. .. Rig.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 6 Wisdom (D.D.), A. Darst Sur., Block 51, 2,550 ft. from NE line and 1,150 ft. from NW line of 640-acre tract .. Drlg. hard shale and lime 3,055 ft.
Intercoastal Oil Co.'s No. 8 Wisdom, 155 ft. from NW line and 150 ft. from NE line, Lot 52, Blk. D, Wisdom Subd., A. Darst Sur. .. Sand showing oil 3,554-89 ft.
The Texas Co.'s No. 1 Cave hrs., 75 ft. SW, 150 ft. SE at right angles from N cor. of Lot A, Blk. 73, Wisdom Subd., A. Darst League .. Spudded.

ORANGE—ORANGE COUNTY

Jefferson Prod. Co.'s No. 1 Bland .. Sandy shale 2,980 ft.; drill stem stuck.

LOCKWOOD—FORT BEND COUNTY

Cullen & West and Gulf Prod. Co.'s No. 3-A Lockwood & Sharp, J. Rabb Sur., 600 ft. E of No. 2-A .. Shale showing oil 5,042 ft.; cem. 6⅝-in. casing 5,025 ft.
Cullen & West and Gulf Prod. Co.'s No. 4-A Lockwood & Sharp, J. Rabb Sur., 550 ft. W of No. 2-A .. Derrick.
Cullen & West and Gulf Prod. Co.'s No. 2 H. P. Lockwood, J. Rabb Sur., 300 ft. N and 900 ft. W out of SW cor. 383-acre tract .. Drlg. shale and lime 3,545 ft.
Cullen & West and Gulf Prod. Co.'s No. 1 J. H. P. Davis, Robert Peebles Sur., 350 ft. S and 900 ft. E of SW cor. of A. P. George 619-acre tract .. Derrick.
Gulf Prod. Co.'s No. 1 Mary D. Booth Meyers, J. Rabb Sur., 300 ft. N of Cullen & West's No. 2-A Lockwood & Sharp .. Rig.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 21-A Cotton .. Oil sand 500 ft.

MARKHAM—MATAGORDA COUNTY

Deering & Newman's No. 1 Hawks (W.O.), W. H. Gayner Sur., 200 ft. from S line and 100 ft. from E line of tract .. Rig up to deepen 4,150 ft.
Powers Prod. Co.'s No. 1 N. R. Meyers, Wm. Hadden Sur., 750 ft. from E line, 300 ft. from N line, Blk. 6 .. Sand showing oil 3,232-41 ft.; set casing.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 6 Lost Lake, 2,381 ft. W and 289 ft. S of No. 5 in Lost Lake .. Drlg. sandy shale and sand 5,113 ft.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTIES

Gulf Production Co.'s No. 4 McFaddin, J. McFaddin Sur. .. Sand and shale showing oil. 6,000-08 ft.
B. Manning's No. 1 Sergent, James McFaddin Sur., 50 ft. S and 450 ft. E of Texas Gulf Sulphur Co.'s No. 2 Sergent in Humble tract .. Rig.

REFUGIO—REFUGIO COUNTY

Larco Gas Petroleum Co.'s No. 4 Strauch heirs, 150 ft. from N line and 150 ft. from W line, Lot 6, Blk. 2 .. Drlg. 10-in. casing plug 235 ft.
Mission Drilling Co.'s No. 3 J. J. O'Brien, Refugio town tract, 150 ft. from N line, 150 ft. from E line of 12½-ac. tract .. Drlg. shale 1,610 ft.
Moody-Seagraves Prod. Co.'s No. 2-A St. John, Refugio town tract, 600 ft. E of No. 1-A and 300 ft. from N line of lease .. Drlg. sticky shale and lime 4,910 ft.
United Prod. Corp.'s No. 2-A W. J. Fox, Wm. Hews and L. Brown Sur., 2,099 ft. NE along SE line from SE cor. of lease, thence 1,690 ft. NW at right angles .. Coring salt water sand 5,648 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co.'s No. 32 Miller, 925 ft. E and 480 ft. S of NW cor. S half of NW of Sec. 9-10s-9w .. Drlg. shale and lime 857 ft.

JENNINGS—ACADIA PARISH

Jennings Pet. Co.'s No. 2 Eunice Crowley (W.O.), 325 ft. S and 50 ft. W out of the NE cor. of Sec. 42-9s-2w. Reset screen 4,254 ft.; comp. flowing 900 bbls. fluid, 15 per cent oil.
Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, 5,435 ft. E and 1,070 ft. N of SW cor., Sec. 47-9s-2w .. Coring hard sand and shale showing oil and gas 7,812 ft.

SORRENTO—ASCENSION PARISH

Gulf Ref. Co.'s No. 20 United Land Co., 4,040 ft. N and 760 ft. W, SE cor., Sec. 15-10s-4e .. Drlg. gumbo 3,567 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 28 Watkins, 1,070 ft. N, 1,742 ft. W of SE cor., Sec. 13-12s-10w .. Abandoned in anhydrite 3,240-3[illegible] ft.
Calcasieu Oil Co.'s No. 29 Watkins, 1,483 ft. W and 1,206 ft. N of SE cor. of Sec. 13-12s-10w .. Rig.
R. E. Seiss' No. 3 Vincent, 2,195 ft. S and 1,320 ft. W of NE cor. Sec. 30-12s-10w .. Location.
R. E. Seiss' No. 2 J. M. Vincent .. Shut down 2,163 ft.
J. G. Sutton's No. 3 Irwin, 1,520 ft. N and 1,395 ft. W of SE cor. of Sec. 13-12s-10w .. Rig.
Yount Lee Oil Co.'s No. 44 State, 1,110 ft. N and 1,915 ft. W of SE cor., Sec. 13-12s-10w .. Location.
Yount Lee Oil Co.'s No. 45 State, 1,220 ft. N and 810 ft. W of SE cor., Sec. 13-12s-10w .. Location.
Yount Lee Oil Co.'s No. 46 State, 1,380 ft. N and 1,555 ft. W of SE cor., Sec. 13-12s-10w .. Drlg. sand and shale 2,520 ft.
Yount Lee Oil Co.'s No. 47 State, 1,420 ft. N and 1,408 ft. W of SE cor., Sec. 13-12s-10w .. Location.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 9 Gray (D.D.) .. Drlg. gumbo 1,726 ft.
Vinton Pet. Co.'s No. 10 Gray (W.O.) .. Sand showing oil 3,420 ft.; cem. 4½-in. liner 3,300 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 5 Sweet Lake (D.D.), Sec. 12-13s-8w .. T.D. 5,658 ft.; sidetracking in hard sandy shale 5,172 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

O'Hara Oil & Gas Co.'s No. 1 Nellous, J. C. Cummings-Hacienda Sur., 650 ft. N of No. 1 Schroeder in 18-acre tract, north edge Mill Creek .. Derrick.
Pomacal & Boletka's No. 1 Schebajsa, 329 ft. N, 78 degrees E of N cor. B. Dottery Sur., near center of SW line of S. F. Austin 4 League on west fork of Mill Creek .. Rig.

BRAZORIA COUNTY

W. D. Southerland's No. 1 C. W. Chapman, Andrew Robinson Sur., 250 ft. N and 150 ft. W of SE cor. of Strip 2 .. Rig.
The Texas Co.'s No. 2 Belcher, Harvey N. Little Sur., 1,728 ft. southeasterly from N cor. of S half of Sur., along NE line and thence 123 ft. at right angles .. Rig.
United Oil Syndicate's No. 1 Levitt, 900 ft. from W line and 400 ft. from S line of John Peske Sur. .. T.D. 1,594 ft. in gumbo; drill-stem stuck.

BURLESON COUNTY

Marek & Son's No. 3 A. Marek, N. McFaddin Sur., 1,065 ft. N and 225 ft. W of SE cor. of tract .. Drlg. rock 2,186 ft.
Marts et al's No. 1 W. H. Boyett, W. McWilliams Sur., 3,168 ft. N of N cor. of City National Bank 208-acre tract and 300 ft. SE of NW line of Boyett tract .. Dry and abandoned 3,014 ft.
M. O. & T. Corp.'s No. 1 Rigers .. Drlg. sandy shale 1,920 ft.

FORT BEND COUNTY

Stone & Wyman's No. 1 Beard, H.&T.C. Sur. No. 118, 1,150 ft. from NW line and 1,892 ft. from NE line .. Shut down 1,275 ft.; 2 joints drill stem lost in hole.

GRIMES COUNTY

Rianjo Oil Co.'s No. 2 Cuthrell, Pat B. O'Connor Sur., C of 110-acre tract .. Drlg. hard rock 3,205 ft.

HARRIS COUNTY

Givens & Daybault's No. 1 Lobit, David Middleton Sur., Blk. 19, Lobit Subd. .. Drlg. hard sand 2,546 ft.
Humble Oil & Ref. Co.'s No. 2 Irwin (D.D.), Mykawa, Wm. Lovett Sur. .. Tried to blow out 6,401 ft.; killed gas and holding 800 to 1,000 lbs. pressure on casing.
Humble Oil & Ref. Co.'s No. 5 Minnetex, Mykawa, 150 ft. from S line and 200 ft. from W line, Lot 261, Wm. Lovett Sur. .. Location.
Louisiana Oil & Dev. Co.'s No. 1 J. W. Wilson, W. Ritchie Sur. .. Shut down 420 ft.
Shubert & Alexander's No. 1 Herman Hale, 1,056 varas E of NW cor. R. A. Hanks Sur., thence 790 varas S and thence 70 varas W 74 degrees .. Shut down in gumbo 3,206 ft.

JACKSON COUNTY

Chicago-Gulf Oil Co.'s No. 9 Drushell, Edna F. Rodriguez Sur., 1,080 ft. N, 58 degrees E No. 8 .. Gas sand 2,640-44 ft.; cem. 6⅝-in. casing 2,640 ft.

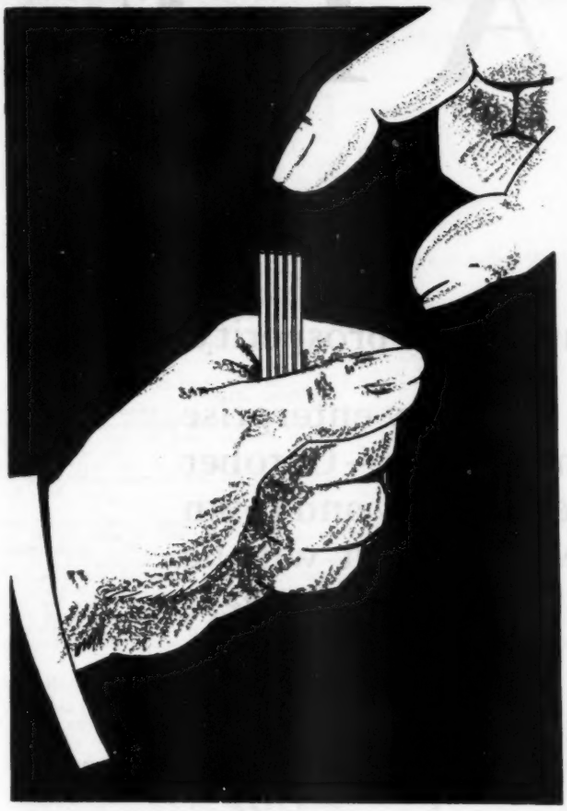
JASPER COUNTY

Hext Drlg. Co.'s No. 1 Flourney, B. F. Jones Sur., 600 ft. NW of Helmerich & Payne's No. 1 Flourney .. Drlg. gumbo 2,159 ft.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 Nelson, Wm. Rice Sur., 550 ft. from N line and 50 ft. from E line of W half of 1,071-ac. tract .. Coring shale 4,482 ft.
John L. Pipkin and Elam's No. 1 Broussard, McGaffey Sur., 800 ft. from S line in center E and W of 206-ac. tract .. Drlg. gumbo 280 ft.
Texas Gulf Sulphur Co.'s No. 1 Thompson, Fannett, Wm. Smith Sur., 1,950 ft. W and 1,600 ft. S of NE cor. of Thomas 446-acre tract .. Sulphur test.
Texas Gulf Sulphur Co.'s No. 1 Thomas Fannett, Wm. Smith Sur., 1,950 ft. W, 1,600 ft. S of NE cor. of Thomas' 446-ac. tr. .. Sulphur test.

MERELY DRAWING STRAWS *is unnecessary!*



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Committee on Mobilization of Relief Resources

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Chairman

The President's Organization on Unemployment Relief is non-political and non-sectarian. Its purpose is to aid local welfare and relief agencies everywhere to provide for local needs. All facilities for the nation-wide program, including this advertisement, have been furnished to the Committee without cost.

Westbury Oil Co.'s No. 4 West, 450 ft. W and 4,210 ft. S of NE cor. of T. D. Yoakum Sur. ..... S.D. in gumbo 600 ft.

LIBERTY COUNTY

L. B. House's (I. R. Ingram) No. 1 C. T. Palmer, James Fenner Sur., 1,000 ft. from W line and 850 ft. from S line of tract ..... Coring shale and sand 3,460 ft.
Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; S.D.

MATAGORDA COUNTY

United North & South Oil Co.'s No. 1 Stoddard, J. C. Keller Sur., 150 ft. W and 645 ft. N of SE cor. Blk. 53, Buckeye townsite ..... Shale 5,543 ft.; fishing drill pipe.
Harvey Smith's No. 1 Baker (Citrus Grove), J. V. Criswell Sur., Robbins Subd., 2,000 ft. S and 2,000 ft. E of NW cor. of Lot 14 and Lot 15 ..... Drlg. shale 2,085 ft.

MONTGOMERY COUNTY

Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract ..... Shut down 690 ft.
Humble Oil & Ref. Co.'s No. 1 W. A. Penn, 750 ft. from N line and 900 ft. from E line of S. J. McFarland Sur. ..... Drlg. shale 4,337 ft.
Stanolind Oil & Gas Co.'s No. 1 R. M. Gary, Jacob Shannon Sur., 150 ft. SW of SW cor. D. Pitts 91-acre tract in R. M. Gary 633-acre tract ..... Location.
Strake et al's No. 1 South Texas Dev. Co., 468 ft. in westerly direction along N line of Theo. Slade Sur. from SW cor. of A. McGowan Sur., and thence 750 ft. in southerly direction at right angles from said line in Slade Sur. ..... Shut down in shale 4,680 ft.

NEWTON COUNTY

R. T. Briscoe et al's No. 1 Joe Inman, approx. 1,900 ft. E and 500 ft. N of SW cor. of J. M. Scott Sur. ..... Spudded.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... T.D. 4,063 ft.; sidetracked 1,300-2,200 ft.; S.D.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 ..... Drlg. gumbo 2,055 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... S.D. 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 371 ..... Drlg. shale 1,520 ft.
Trans-Coastal Oil Co.'s No. 1 M. E. Roberts, J. F. Rumayor Sur., 350 ft. from W line and 150 ft. from N line of tract ..... S.D. 734 ft.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 14, Bonnie View Ranch Subd. ..... Shut down 4,627 ft.
J. C. Dixon's No. 1 Peck, 450 ft. S, 150 ft. E of NW cor. of S half of Sec. 24, Bonnie View Ranch Subd., Estaban Lopez Sur. ..... Rig.
Humble Oil & Ref. Co.'s No. 1 O'Connor, John Keating Sur., 4,013 ft. S from NE cor. along SE line of Lon T. Ross Sur., thence 7,375 ft. W at right angles in John Keating Sur. ..... Sand 3,912 ft.; to make drill stem test.

SAN JACINTO COUNTY

E. P. Edwards' No. 1 J. R. Bennett, Cold Springs ..... S.D. 750 ft.

TRINITY COUNTY

Scientific Producers Co.'s No. 1 Thompson, L.&G.N. Sur. No. 47, 50 ft. out of NE cor. of H. K. Thompson 199-ac. tr. ..... Rig.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,255 ft.; cmtd. 6-in. csg. 1,218 ft.; standing.
Allied Pet. Co.'s (Texas Southern Pet. Co.) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... Fishing 5,025 ft.

VICTORIA COUNTY

Bunte et al's No. 1 Keeran, 3,714 ft. NE along railroad from SW line of Martin DeLeon Sur., and thence 1,600 ft. NW at right angles ..... Drlg. shale 3,019 ft.
Houston Oil Co.'s No. 1 Conrad, T.&N.O. Sur. No. 1, 1,100 ft. from SW line and 100 ft. from NW line.... Heaving shale 5,225 ft.; to plug back.
The Texas Company's No. 3 McFaddin, S 15 degrees W, 6,200 ft. and N 75 degrees W 1,850 ft. out of NE cor. John M. Rine Sur. ..... Coring shale 5,159 ft.

WALKER COUNTY

Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,365 ft. S, 1,876 ft. W of SW cor. of J. B. Gibson's 71-ac. tr. ..... Drlg. shale 410 ft.
McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-ac. tract ..... Spudded.

WASHINGTON COUNTY

Moon & Yeager's No. 1 Hahn, 500 ft. from N line and 1,852 ft. from W line of J. H. Alcorn Sur., Abst. 3.. Drill stem stuck 3,635 ft.
Penn-Tex Oil Co.'s No. 2 Kamah Brenham, S. M. Williams Sur. ..... Lime and anhydrite 3,520 ft.

WHARTON COUNTY

Beard & Brumblow's (Shibe & Gray) No. 1 Brown (W.O.), S of El Campo ..... Abandoned 3,345 ft.
W. H. Wallace et al's No. 1 Lee, 600 ft. S and 800 ft. W from NE cor., Sec. 18, G.H.&H. Sur. ..... Drlg. shale 3,745 ft.

SOUTH LOUISIANA
ASCENSION PARISH

McElroy Pet. Co.'s No. 2 Lacey, 150 ft. S, 150 ft. W of NE cor. of Sec. 29-10s-4e ..... No report.

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... S.D. 875 ft.
L. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Standing 6,568 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... S.D. 3,650 ft.
Success Oil Co.'s No. 1 Hewitt, 90 ft. out of SW cor., Sec. 11-9s-11w ..... Rig.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 22 Lake Peigneur, Sec. 58-12s-5e, 600 ft. NW of No. 21 ..... Sulphur test.
Jefferson Lake Oil Co.'s No. 23 Lake Peigneur, Sec. 58-12s-5e, 600 ft. NW of No. 22 in line with No. 21.. Sulphur test.
Jefferson Lake Oil Co.'s No. 24 Lake Peigneur, Sec. 58-12s-5e, S 600 ft. 79 deg. 30 min. W of No. 22 ..... Sulphur test.

IBERVILLE PARISH

Standard Oil Co.'s No. 2 Myrtle Grove-Wilbert, Bayou Choctaw, 2,040 ft. N and 600 ft. W of center of Sec. 52-9s-11e ..... Building derrick.
Standard Oil Co.'s No. 3 Gay, Bayou Choctaw, 4,500 ft. N and 600 ft. E of SW cor. SE of Sec. 53-9s-11e ..... Rig.
Standard Oil Co.'s No. 6 Schwing, Bayou Blue, Sec. 73-9s-11e, 317 ft. S of No. 2 ..... Drlg. rock 5,850 ft.

LA FOURCHE PARISH

State Production Co.'s No. 1-B Stark, 1,921 ft. E and 1,540 ft. S of NW cor. of Section 71-15s-15e ..... Sulphur test.
State Production Co.'s No. 1-C Mrs. W. H. Stark, Sec. 71-15s-15e ..... Abandoned 1,449 ft.
The Texas Co.'s No. 3 La.L.&E., Leesville, 4,439 ft. S and 468 ft. E of NW cor., Sec. 26-21s-32e ..... Drlg. gumbo 800 ft.

PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 6 Cockrell-Moran, Lake Grand Ecaille, Twp. 21-26e, 5,000 ft. E of Washington Sts. ..... Salt 1,574-1,612 ft.; plugged to showing in cap rock 1,322 ft.; rigging up to pump.
Humble O. & R. Co.'s No. 5 Cockrell-Moran, Lake Grand Ecaille, 10,377 ft. N and 2,614 ft. W of NE cor. of Twp. 21s-26e ..... Location.

TERREBONNE PARISH

La. Gas & Fuel Co.'s No. 2 Minor, 3,480 ft. S and 1,980 ft. E of NW cor., Sec. 3-18s-16e ..... Drlg. sand 3,882 ft.
The Texas Company's No. 2 La.L.&E., Bay Junop ..... Drlg. hard sandy lime 5,015 ft.
The Texas Company's No. 4 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 10 State, Lake Barre ..... Location.
The Texas Company's No. 11 State, Lake Barre ..... Oil sand 3,782-3,806 ft.; cem. 7⅝-in. casing 3,781 ft.
The Texas Company's No. 12 State, Lake Barre ..... Location.
The Texas Company's No. 14 State, Lake Barre ..... Location.
The Texas Company's No. 1 La.L.&E., Lake Barre, 2,645 ft. S and 595 ft. E of NW cor., Sec. 30-21s-20e.. Rigging up.

VERMILLION PARISH

Pure Oil Co.'s No. 2 Southwest Louisiana Land Co., 1,300 ft. E and 300 ft. S of NW cor. Sec. 4-12s-1w... Drlg. coarse sand 7,399 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 2 Como Plantation, Sec. 51-1s-4w. Shale and lime 2,050 ft.; waiting on 8¼-in. csg.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 41)

Callahan Final Oil Co.'s No. 1 B. H. Buck, 900 ft. to E line, 3,200 ft. to S line of farm, in J. M. McGamley Sur. ..... T.D. 200 ft.; drlg.
Ingersoll-Miller's No. 2 Carruth, 3,900 ft. S, 2,500 ft. W of NE cor. of tr. in Francisco Bolen Sur. ..... T.D. 480 ft.
Dr. Ewell Neil's No. 1 J. Watson, 500 ft. from W line, 1,700 ft. from S line of B. Martinez Sur. ..... T.D. 2,100 ft.; drlg. chalk.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T.D. 1,050 ft.; drlg.
Tri-State Oil Co.'s No. 1 E. B. Carruth, 2,500 ft. from S line, 2,560 ft. from E line of tr. in F. Bolen Sur. ... T.D. 770 ft.
S. W. Blount's No. 1 S. A. Land Co., I. Perez Sur., 1,000 ft. to N line, 450 ft. to W line of tract..... T.D. 300 ft.; drlg.
Crawford & Terrell's No. 1 L. F. Ridder, 1,200 ft. to N line, 900 feet to S line of 700-acre tract, J. A. Baerera Sur. ..... T.D. 515 ft.; abnd.

CALDWELL COUNTY

Lloyd North's No. 1 Keith McGee (previously carried as Ralph R. Lewis), 600 ft. from E and S lines of tr. in J. Pinchback Sur. ..... T.D. 50 ft.; laying wtr. line.
M. O. Rayor's No. 3 N. L. Dunlop, 350 ft. to NW line, 150 ft. to NE line of farm, Solomon Seal Sur. ..... T.D. 48 ft.; spudded in; S.D.

DEWITT COUNTY

Gibson & Sturm's No. 1 Clark, Dolores Alderete Sur. .... Rigged up; standing.

DUVAL COUNTY

Thomas & Tarver, Inc.'s No. 1 Wood-Welder, 500 ft. to N line, 4,320 ft. to W line of Sur. No. 102 ..... T.D. 2,156 ft.; set csg.
S. J. Carpenter et al's No. 1 Juan Benavides, Blk. 33, Mesquite grant ..... T.D. 1,712 ft; standing.

FRIO COUNTY

A. H. Wray's No. 1 Roche, 330 ft. from N and W lines of NW SE, Sec. 123, A. Hutzler Sur. ..... T.D. 3,180 ft.; standing.

GUADALUPE COUNTY

Pray & Campbell's No. 1 Kruger, 150 ft. to E line and 150 ft. S of Guadalupe River ..... T.D. 420 ft.; drlg.
Barnhill et al's No. 1 H. L. Hoffman, 450 ft. to N and W lines of farm, in John G. King Sur. ..... T.D. 800 ft.; drlg.
Harry Bruner's No. 2 Jim Sherrill, 330 ft. from NW and SW lines of tr. in Geo. Allen League ..... T.D. 180 ft; standing.
Schleyer, Atherton and Armstrong's No. 1 Ogletree, Robert Smith Sur. ..... T.D. 1,745 ft; S.D.
M. W. Elser's No. 1 Wells, 2,790 ft. to W line, 150 ft. to S line of farm in Jose de la Baume Sur. ..... Rigging up.
J. M. Scott's No. 1 E. Drumm, 250 ft. to W line, 150 ft. to S line of tract, C. Campbell Sur. ..... Location.

GOLIAD COUNTY

Plymouth Oil Co.'s No. 1 Parka, 5 miles NE Goliad..... T.D. 3,579 ft.; S.D.
Neal et al's No. 1 J. M. Pettus, 10,700 ft. to S line, 2,500 ft. to E line of Pedro Trevino Sur. ..... T.D. 410 ft.; set surface csg.

JIM WELLS COUNTY

Stanolind O. & G. Co.'s No. 1 N. A. Hoffman, 6,800 ft. from S line, 10,000 ft. from W line of most easterly NE cor. of 7,000-ac. ranch in La Trinidad Sur. .... T.D. 5,588 ft.; drlg.

KENDALL COUNTY

Borgett et al's No. 1 W. Haag, 3,804 ft. from N line, 1,506 ft. from W line of W. Avery Sur. ..... T.D. 1,245 ft; S.D.
Dixon Oil Co.'s No. 1 Ottmar Behr, 823 ft. from S and N lines of Jessie Wilson Sur., 3 miles S of Sisterdale ..... T.D. 2,708 ft; standing.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T.D. 1,482 ft; S.D.
Fred S. Dibble's No. 1 Ellebrach, Sur. 77, N part of county ..... T.D. 50 ft; S.D.

KERR COUNTY

Herbert Oil Co.'s No. 1 J. D. Witt, 1,320 ft. N line, 1,320 ft. W line of Sec. 1,923, W. H. Hamilton Sur. .. T.D. 200 ft; standing.
Evans & Gant's No. 1 Selker-Mears, C.C.S.D.&N.G.R.G. Sur. No. 1,605 ..... T.D. 4,031 ft.; abnd.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28. T.D. 1,312 ft; standing.
Evans & Gant's No. 2 Love, 150 ft. S and W line of Sur. 1,593 ..... T.D. 4,018 ft.; drlg.

KARNES COUNTY

V. F. Neuhaus' No. 1 Russell, 150 ft. to E line, 150 ft. N of Highway, in Carlos Martinez Sur. ..... T.D. 1,804 ft.; S.D.
United North & South's No. 1 Morrell, 330 ft. from W line, 990 ft. from S line of tr. in Carlos Martinez Sur. ..... T.D. 2,787 ft.; abnd.

LA SALLE COUNTY

Buckley Ranch O. & G. Co.'s No. 1 Buckley, 200 ft. from S line, 330 ft. from W line of Sur. No. 37 ..... T.D. 4,503 ft.; contract depth.

LIVE OAK COUNTY

Henderson Coquat's No. 1 Hewitt ..... T.D. 400 ft; standing.
V. G. Schimmel's No. 1 Terrell in Mark Killely Sur. .... 950 ft.; drlg.
Phillips Petroleum and Henderson Coquat's No. 1 Sanger, 150 ft. to most S of N lines, 2,000 ft. to W line of tract ..... T.D. 900 ft.; drlg.

LEE COUNTY

A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T.D. 3,525 ft; S.D.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur. .... T.D. 2,300 ft; S.D.
Chadwick et al's No. 1 Hickey, 1,000 ft to NW line, 300 ft. to NE line of farm in Warreiman Sur. ..... T. D. 20 ft.; spudded in.

MAVERICK COUNTY

I. N. Boicourt's No. 1 Bandera, School Land ..... T.D. 2,254 ft; standing.

McMULLEN COUNTY

Whall, Scherer et al's No. 1 Shiner, Henry Brewer Sur... T.D. 2,008 ft.; abnd.
Jacob, Bussini & Pickett's No. 1 Jacob in NE part of county ..... Rigging up.

MEDINA COUNTY

Frank A. Brown's No. 1 Fohn, 150 ft. from E line, 790 ft. from N line of J. F. Torry Sur. No. 113..... T.D. 922 ft; twisted off drill stem; fishing.
Genard Bros.' No. 1 L. Crawford, 150 ft. to N and W lines of tr. in J. Keppler Sur. No. 478 ..... T.D. 2,240 ft.; S.D.
J. H. Hickey's No. 1 Jungman at N end Chicon Lake.... T.D. 650 ft; S.D.
Star Pet. Co.'s No. 1 Medina Valley Irrigation Co., 150 ft. from S and E lines of Isom Palmer Sur. No. 20.... T.D. 825 ft; S.D.

C. J. Webster Oil & Gas Co.'s No. 1 Adams, 2,450 ft. to N line, 160 ft. to E line of Jos. Hillemeyer's No. 25..Derrick up. M.I.M.

MILAM COUNTY

Dil-Tex Oil Corp.'s No. 1 E. Lawson, 560 ft. from NE and 270 ft. from SE lines of farm in Fernando Rodrigues Sur., near Cause .....T. D. 2,550 ft.; standing.
H. W. Elliott's No. 1 Marek, 767 ft. from N line, 600 ft. from W line of 160-ac. tr. in B. Wickson Sur. .....T.D. 1,456 ft.; S.D.
Nowlen's No. 1 Beard, 1,350 ft. from SE line, 450 ft. from SW line of farm, in J. F. Guthrie Sur., 4 miles S Thorndale .....T.D. 2,036 ft; S.D.
Red Bank Oil Co.'s No. 2-A J. A. Foster, 5,243 ft. to SW line, 150 ft. to NW line of farm .....Rigging up.

NUECES COUNTY

Southern Crude Oil Pur. Co.'s No. 1 Chas. E. Stratton, 1,650 ft. E line, 330 ft. S line of P. Sancho Sur. ....T.D. 4,765 ft; testing.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 .....T.D. 2,530 ft; S.D.

TRAVIS COUNTY

C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur. .....T.D. 1,154 ft.; drlg.
Ray & Henze's No. 1 Hatech, in C of tr. in S. Hamilton Sur. .....T.D. 540 ft.; drlg.
Waldron et al's No. 1 T. Cook, 900 ft. from NW line, 3,500 ft. from SW line of D. H. Minor Sur. .....T.D. 1,420 ft.; drlg.

WEBB COUNTY

Power & Dettenhaim's No. 1 Cowan & Goss, 1,870 ft. from W line, 1,656 ft. from N line of Sur. No. 1,606..T.D. 150 ft; drlg.
Winfield Killam's No. 1 Killam, Blk. 18, Sur. 1,618, near Reiser .....T. D. 2,050 ft.; drlg.
Cole Pet. Co.'s No. 4 Benavides, 2,480 ft. to E line, 160 ft. to S line of Sur. No. 1,613 .....T.D. 4,050 ft; S.D.
Fansler, Johnson & Peacock's No. 1 Laurel, 425 ft. to N line, 600 ft. to E line of Blk. 10, Sur. 271 .....T.D. 100 ft.; drlg.

WILLIAMSON COUNTY

Burns et al's No. 1 Wilder, 1,800 ft. to N line, 200 ft. to W line of tr. in H. Owens Sur. .....T.D. 210 ft.; drlg.
Hays & Gee's No. 1 R. G. Johnson, 1,800 ft. from N line, 170 ft. from E line of tr. in B. C. Low Sur., S of Georgetown .....T.D. 1,565 ft.; drlg.
McLean's No. 1 R. C. Miller, 300 ft. from S line, 150 ft. from W line of farm in Manlove Sur. .....T. D. 1,700 ft.; shut down.
R. S. Wilson's No. 1 Speckles, 150 ft. N of road, 600 ft. from W line of farm in J. Jordan Sur., 1 mile N of Coupland .....S.D. 875 ft.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur. .....T. D. 1,600 ft.; shut down.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 580 ft. from SE line of Blk. 27, Porcion 37 .....T.D. 60 ft.; drlg.
M. D. Slator's No. 1 Slator, 1,000 ft. from SE line 1,200 ft. from SW line of Blk. 25, J. V. Borrego grant ...T.D. 1,565 ft.; abnd.
F. H. Etheridge's No. 1 Henne-Winch, in Sur. No. 288..T.D. 1,900 ft; drlg.
T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Porcion No. 6, T. Uribe Partition of Jose V. Borrego Sur. .....Rigged up and standing.
Bill Henry et al's No. 1 Gopher Trust estate, Borrego grant .....T.D. 1,535 ft; standing.
J. M. Gier's No. 1 Garza Estate, 150 ft. to NW and SW lines, Blk. 18, C. A. Douglas Sub., M. Garza land in Comitas grant .....Rigging up.
Lowe, Rogers et al's No. 3 Prudencia Benavides, 510 ft. to S line, 450 ft. to W line of Blk. 16, Sur. No. 11..Location.
National Oil Co.'s No. 1 Zapata Trust estate, 617 ft. NW line, 96 ft. NE line, Blk. 97, De Prom Subd., Porcion 6 .....T.D. 600 ft; standing.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant .....T.D. 1,320 ft; standing.
Newton, Owens & Evans' No. 1 Garza, 200 ft. to N line, 300 ft. to W line of Blk. 4, Share 1, Sur. 161 .....T.D. 1,758 ft.; comp. 15,000,000 ft. gas.
Winch & Billings' No. 2 Bustamente, 862 ft. to NE line, 150 ft. to SE line of Share 31, Pal-Mar tract, Share 35, Fansler Sub., Comitas grant .....T.D. 200 ft.; drlg.
United Prod. Co.'s No. 10 Measles, 1,000 ft. to NE line, 1,550 ft to SE line of Sur. No. 207 .....Set surface csg.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 41)

Humble O. & R. Co.'s No. 2 Paul White, 1,320 ft. to W line, 990 ft. to S line of Sur. No. 58 .....T.D. 2,339 ft.; comp. 200 bbls.
Magnolia Pet. Co.'s No. 6 Wilson, 330 ft. to E line, 2,346 ft. to N line of Sur. No. 136 .....T.D. 2,300 ft.; set csg.
Magnolia Pet. Co.'s No. 5 Wilson, 330 ft. from N line W line, 330 ft. from S line of Sur. 135 .....T.D. 2,316 ft.; set csg.
The Texas Co.'s No. 3 Bishop Cattle Co., 1,175 ft. to W line, 990 ft. to S line in Sur. 135 .....T.D. 2,354 ft.; comp. 500 bbls.

COLE POOL—DUVAL COUNTY

Cole Petroleum Co.'s No. 71 Benavides, 365 ft. from SE line, 442 ft. from NE line of Blk. 8, Sec. 19, Cole sub. Mariana Arispe grant .....T.D. 1,757 ft.; fishing.

CAMP POOL—GUADALUPE COUNTY

Humble Oil & Refining Co.'s No. 2-C Sue Denman, 900 ft. N, 460 ft. E of SW cor. of lease and 450 ft. N, 300 ft. E, 1-C, William Arrington Sur. .....T.D. 1,020 ft.; drlg.

WALSH POOL—JIM WELLS COUNTY

Larcro Pet. & Gas Co.'s No. 2 Wade, 800 ft. S of No. 1..T.D. 2,921 ft.; comp. 50,000,000 ft. gas.

HENNE-WINCH-FARISS POOL—JIM HOGG COUNTY

O. W. Killam's No. 2 Lopez, 150 ft. to E line, 330 ft. to N line of Sur. 255 .....T.D. 1,500 ft.; drlg.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 14 Cartwright, 1,000 ft. W of No. 23 Cartwright .....T.D. 5,400 ft; standing.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities' No. 8 Chittim, 24 ft. S of No. 7 Chittim .....T.D. 4,850 ft.; no report.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Sagarin.....T.D. 4,638 ft.; drlg.
Gulf Coast Oil Co.'s No. 1 Elder, NW of same company's No. 1 Harrell .....T.D. 4,897 ft.; tested salt water.
Houston Oil Co.'s No. 1-A T. M. Harrell, 330 ft. to N and E lines of tract in H. B. Sheppard Sur. .....Location.
Neal-Milton and Kepley Pet. Co.'s No. 1 J. N. Roark, 200 ft. to S line, 200 ft. to E line of 106-ac. tr. .....T.D. 4,844 ft.; testing.

Saxet Oil Co.'s No. 3 Donigan, north offset to Zoch's No. 1 Baldwin .....Location.
Saxet Oil Co.'s No. 5 Weil, 3,041 ft. to N line, 333 ft. to W line .....Set surface csg.

WELDER FIELD—SAN PATRICIO COUNTY

Atlantic Oil Prod. Co.'s No. 1 Welder, 500 ft. to N and W lines, Blk. 3, F. R. Portillo Sur. .....T.D. 300 ft.; drlg.

WHITE POINT POOL—SAN PATRICIO COUNTY

Hooks & Weaver's No. 3 Kelsey-Bass, 1,050 ft. to W line, 1,800 ft. to S line, Blk. 3, Sub. of Porcions 75, 76, 77, Jurisdiction of Camargo, Sur. No. 6 .....T.D. 200 ft.; drlg.
Saxet Oil Co.'s No. 18 Rachel .....T.D. 1,425 ft.; drlg.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 1 Seabury, 1,800 ft. to S line, 175 ft. to E line of 636-ac. tr. in Porcion 75....T.D. 390 ft.; abnd.
Los Olmos Oil & Gas Co.'s No. 6 Kelsey-Bass, 150 ft. to W and S lines of north half of Blk. 5, Porcions 75, 76, 77, Jurisdiction of Camargo, Sur. No. 5 .....T.D. 335 ft.; bailing 2 bbls. dail
L. L. Smith No. 1 Kelsey-Bass, Blk. 8 sub. Porciones 75, 76, 77, Jurisdiction of Camargo .....Location.
San Marcos Oil Co.'s No. 1 J. F. Ivey, 1,000 ft. to N line, 300 ft. to E line, Share 8, Sub. W two-thirds Porcion 75, Jurisdiction of Camargo .....T.D. 515 ft.; abnd.
San Marcos Drilling Co.'s No. 1 Ivey, Porcion 75, Jurisdiction of Camargo .....T.D. 515 ft.; abnd.
San Marcos Oil Co.'s No. 2 J. F. Ivey, 1,800 ft. to N line, 300 ft. to E line, Share 8, Sub. W two-thirds of Porcion 75, Jurisdiction of Camargo .....Testing sand.

CAROLINA-TEXAS POOL—WEBB COUNTY

Carolina-Texas O. & G. Co.'s No. 10 Barnsley, 150 ft. to E line, 200 ft. to S line of Blk. 14, Sur. 268.....Derrick.
Usher Carson's No. 5 Webster, 150 ft. to N and W lines of NW quarter of SE quarter of Sur. No. 654.....T.D. 3,065 ft.; testing sand 3,042-65 ft.

COLE POOL—WEBB COUNTY

O. W. Killam's No. 22 Bruni, 1,755 ft. to SW line, 186 ft. to NW line, Sec. 9 .....T.D. 2,380 ft.; drlg.

ESCOBAS POOL—ZAPATA COUNTY

Claggett et al's No. 1 Cuellar, Blk. 6, Sur. 61 .....Rigging up.
Pray & Chamberlain's No. 4 Garza, Blk. 1, Comitas grant..Making location.
E. K. Bateman's No. 1 M. Garza, in Comitas grant, 200 ft. to NW line, 660 ft. to NE line of Blk. 29.....Spudded in.
Grayburg Oil Co.'s No. 1 F. G. Martinez, 150 ft. from S and W lines of 240-ac. tract in E½ of Sur. 4.....Spudded in.
Newton, Owens & Evans' No. 1 Garza, 200 ft. to N and W line Block 4, Share 1, Sur. 161 .....T. D. 150 ft.; drlg.
O. W. Killam's No. 10 A. Bustamente, 150 ft. to SE line, 200 ft. to NE line, Blk. 11, Share 5, Fansler Sub., Comitas grant .....Location.
Pray & Chamberlain's No. 4 Garza, Block 1, Comitas grant .....Derrick.
S.R.C. Oil Co.'s No. 5-E Trevino .....Building derrick.

KILLAM-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 45-B Cuellar, 610 ft. to SW line, 5,340 ft. to E line of Sur. 277 .....T.D. 1,559 ft.; comp. 100 bbls.
O. W. Killam's No. 31-A Cuellar, 3,350 ft. from NE line, 475 ft. from NW line of Cerrito Blanco grant..T.D. 1,539 ft.; comp. 35 bbls.
O. W. Killam's No. 46-B Cuellar, 680 ft. to SW line, 4,100 ft. to E line, Sur. No. 277 .....Spudded in.

CHARCO REDONDO POOL—ZAPATA COUNTY

Bob & Richey's No. 25 Martinez, 1,300 ft. from NE line, 1,090 ft. from SE line, Block 24, Dukes sub. Charco Redondo grant .....Location.
Bob & Richey's No. 26 Martinez, 1,460 ft. to NE line 355 ft. to SE line, Blk. 24, Duke sub. Charco Redondo grant .....Location.
Bob & Richey's No. 27 Martinez, 870 ft. to SE line, 150 ft. to NE line, Block 24, Duke sub. Charco Redondo grant .....Location.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 37)

Hudson & Bird's No. 1 Walden, 480 ft. N, 300 ft. E, SW cor. SW NE, Sec. 26-8-11 .....S.D. 1,800 ft.
M. J. Kissick's No. 1 Brown Lbr. Co., Sec. 1-7-11, 1,070 ft. S, 1,225 ft. E, NW cor. NE .....Drlg. 900 ft.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11 .....S.D. 1,606 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,320 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12 .....Reaming to set 9⅝-in. 4,174 ft.
Lyons & Neely's No. 3 Byrd, Sec. 1-7-11 .....S.D. 400 ft.
L. K. McGuffin's No. 1 Bush, NW cor. NW SE, Sec. 1-7-11 .....S.D. 400 ft.
Ben Merritt, tr.'s No. 2 Byrd, Sec. 1-7-11 .....S.D. 88 ft.
Ohio Oil Co.'s No. 12 Bowman-Hicks, Sec. 2-7-12, 150 ft. N and W, SE cor. NE NE .....W.O.S.R. 2,271 ft.
H. W. Perritt's No. 6 Bowman-Hicks, Sec. 2-7-12, 150 ft. S and W, NE cor. SE NE .....Drlg. 620 ft.
Eddie Self's No. 2 Jacob, Sec. 1-7-11 .....Arng. set 6-in. 2,404 ft.
Stovall, tr.'s No. 2 Nulton, 241 ft. N, 330 ft. W, SE cor. NE NW, Sec. 1-7-13 .....Drlg. 2,420 ft. in chalk.

UNION PARISH

Interstate Nat. Gas Co.'s No. 27-C Howard, 660 ft. S and E, from C, Sec. 32-20-3e .....Set 6-in. 2,188 ft.
Nemours Corp.'s No. 1-C Harrell, Sec. 7-20-4e, 1,980 ft. S and E, of NW cor. .....Set 6-in. 2,080 ft.
Stovall Gas Co.'s No. 2 Howard, Sec. 32-20-3e, 1,320 ft. S, 1,980 ft. W, NE cor. .....Drlg. 2,086 ft.

ARKANSAS

UNION COUNTY—EL DORADO

Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15.....Cored rock salt 6,085-6,214 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 .....S.D. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13 .....T.A. 3,586 ft.
Marine Oil Co.'s No. 3-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13 .....Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW .....Drlg. 2,919 ft.

EAST TEXAS

PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, Jno. Palmer Sur. .....S.D. 3,270 ft.
Dillon & Braham's (was W. G. Banks et al's) No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. .....S.D. 1,555 ft.
Nat. Gas Prod. Co.'s No. 3 Floyd, 50 ft. S and 100 ft. W from No. 1 Floyd, Ben C. Jordan Sur. .....Rigging up.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. ..Location.

MISSISSIPPI

HINDS COUNTY

James Alexander, trustee's No. 1 Casey, Sec. 12-5n-1e, 1,425 ft. E, 496 ft. S, NW cor. SW .....Set 10-in. 115 ft.; set 6⅝-in. 2,30 ft.
Ferguson-Fuller et al's No. 1 Sours et al, Sec. 34-6n-1e, 665 ft. E, 50 ft. S, NW cor. SW .....Drlg. 1,403 ft.
Howie & Howie's No. 1 fee, Sec. 34-6-1e, 400 ft. E, 570 ft. S, NW cor. SW SW .....Drlg. 450 ft.
Millsaps College's No. 1 fee, Sec. 34-6n-1e, 2,225 ft. N, 1,412 ft. W, SE cor. Sec. .....Location.

RANKIN COUNTY

Anderson et al's No. 1 Brown, Sec. 12-5n-1e, 166 ft. E, 766 ft. S of center of section .....Rigging up.
Cummins & Montgomery's No. 1 Ivey, Sec. 13-5n-1e, NE Lot 10, Blk. D, E. Jackson Pl., first addn. ....Derrick pattern.
J. E. Grandstaff et al's No. 1 East, Sec. 12-5n-1e, 1,180 ft. W and 515 ft. N, SE SW .....Set 6⅝-in. 2,371 ft.
McGuire et al's No. 1 Motor, Sec. 12-5n-1e, 1,763 ft. N, 1,800 ft. W, SE cor. .....Drlg. 1,955 ft.
Muse & Muse's No. 1 Seany, Sec. 12-5n-1e, 2,670 ft. E, 375 ft. S, NW cor. SW .....Rigging up.
Muse & Muse's No. 1 Wright, Sec. 12-5n-1e, 169 ft. W, 1,163 ft. N, SE cor. SW .....Drlg. 1,480 ft.
Pioneer Oil & Gas Co.'s No. 1 C. M. Motor, Sec. 12-5n-1e, 937 ft. N and E SW cor. section .....Derrick.

WILDCAT OPERATIONS IN MISSISSIPPI

Company, farm and location—	Remarks:
CLARKE COUNTY	
f Ref. Co.'s No. 1-A Long Bell Lbr. Co., C SW SW, Sec. 10-2n-14w	Reaming hole 3,940 ft.
HINDS COUNTY	
ins et al's No. 1 Crane Lawrence, Sec. 23-6n-1e, 300 ft. E, 132 ft. N, SW cor. NE SE	Derrick.
ward Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e	S.D. 74 ft.
uthern Pet. Co.'s No. 1 Wilson (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 28-6-1e	S.D. 20 ft; W.O.
E. Stewart et al's No. 1 Miss. Cotton Seed Products Co., Sec. 4-6n-1e, 330 ft. S and 440 ft. W of NE cor. SE	Derrick.
HUMPHREYS COUNTY	
nciger O. & G. Co.'s No. 1 Belgrade Lbr. Co., C NW, Sec. 29-14n-4w	Drlg. shale 2,805 ft.
JASPER COUNTY	
y Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9	S.D. 2,360 ft.
LOWNDES COUNTY	
wndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec.	Derrick.
MONROE COUNTY	
ory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19	S.D. 3,015 ft.
Alpine et al's No. 1 Cowart, second hole, Sec. 2-12-19	Drlg. 3,787 ft.
NEWTON COUNTY	
b Dalton's No. 1 Majure, 400 ft. N, 300 ft. E of SW cor. SE, Sec. 25-6n-11e	S.D. 847 ft.
NOXUBEE COUNTY	
mpson & Donohue's No. 1 Donohue, Sec. 25-16n-17e	S.D. 1,735 ft.
RANKIN COUNTY	
rkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e	S.D. 1,538 ft.
lf Ref. Co.'s No. 1-A Hanna, Sec. 23-6n-1e	Drlg. 3,044 ft.
ajestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e	Derrick.
uare Deal O. & G. Co.'s No. 1 Spann, NW cor. SE NE, Sec. 13-5n-1e	Set 4½-in. 2,495 ft.
ited Gas Public Service Co.'s No. 1-A McLaurin, 3,950 ft. E, 660 ft. S, NW cor. SW, Sec. 8-5n-2e	Drlg. 3,195 ft.
SCOTT COUNTY	
U. Culley et al's No. 1 Owens, Sec. 2-8-9	Derrick.
WARREN COUNTY	
gle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-3	S.D. 2,607 ft.
ited Gas Public Service Co.'s No. 1 Tchula Co-Operative Store, 1,980 ft. W, 660 ft. N, SE cor. SE, Sec. 33-15n-3e	Reaming 3,286 ft.
WEBSTER COUNTY	
J. McAlpine's No. 1 Henly (was Cumberland Oil Co.'s No. 1 Henly), SE NW, Sec. 15-21n-11e	S.D. 1,800 ft.
WINSTON COUNTY	
ss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14	S.D. 4,080 ft.; repairing boiler.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 37)

M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10	S.D. 1,380 ft.
OUACHITA PARISH	
ilson & Mitchell's No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 240 ft. S, NW cor. SW SE	Drlg. 75 ft.
RED RIVER PARISH	
Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11	Spudded in; S.D. 50 ft.
ack Jourden Co.'s No. 1 Lockett, 4,035 ft. S, 1,080 ft. E, NW cor. SW, Sec. 29, in Sec. 32-13-10	W.O.S.R. 2,750 ft.
RICHLAND PARISH	
to Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5	Derrick.
ational Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18n-7e	S.D. 2,515 ft.
outhern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,525 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6	Location.
SABINE PARISH	
. M. Coate's No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13	Derrick.
avidson & Grigsby's No. 1 Martinez, Sec. 2-7-13, 330 ft. S and W, NE cor. NW SE	Rigging up.
ffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11	Abnd. 105 ft.
xchange Pet. Co.'s No. 1-B Louisiana Long Leaf Lbr. Co., Sec. 35-8-11, 300 ft. N and E, SW cor. NE NW	Rigging up.
L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13	S.D. 3,852 ft.
ehrig Oil Co.'s No. 1 Skinner, Sec. 16-8-11, 615 ft. E, 565 ft. S, NW cor. NW	S.D. for water 104 ft.
. M. Coates' No. 1-A Bowman-Hicks, 330 ft. S and E, NW cor. SW SW, Sec. 18-7-13	S.D. 2,600 ft.
M. LeGrand's No. 1 Peterson, 330 ft. N and E of C, Sec. 34-7-13	Arranging to set 6-in. 2,243 ft.
J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-13	S.D. 2,039 ft.
H. Thames' No. 1 Edward est., 150 ft. NW SE cor. NE SE, Sec. 8-8-13	S.D. 1,200 ft.
TENSAS PARISH	
A. Duvall et al's No. 1 Martin Jacob, 150 ft. S, 150 ft. W, NE cor., Sec. 1-14-11e	S.D. 3,060 ft.
R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-13	S.D. 3,545 ft.
ARKANSAS	
CHICOT COUNTY	
R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 21-23-3	Dry and abnd. 2,975 ft.
COLUMBIA COUNTY	
endall Oil Co.'s No. 1 Fullenweider, Rhea & Kitchen, Sec. 13-17-22	S.D.; W.O. 814 ft.
CLAY COUNTY	
C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-8	Drlg. 1,350 ft.
CLEVELAND COUNTY	
rum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-13w	Rigged up and S.D.
CLEBURNE COUNTY (Cable tools)	
onnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9	S.D. 3,740 ft.
CRAWFORD COUNTY	
ark Nat. Gas Co.'s No. 1 Hammond, C SE SE, Sec. 29-10-29	Drlg. 2,004 ft.
DALLAS COUNTY	
C. Brewer's No. 1 W. E. Hillman, 330 ft. E, 40 ft. S, NW cor. SE NE, Sec. 20-10-13	S.D; W.O. 2,869 ft.
H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S. 200 ft. E, NW cor. NE, Sec. 11-9-15	S.D. funds 2,520 ft.
epp O. & G. Co.'s No. 2 Hillman, Sec. 20-10-13, 180 ft. N, 450 ft. E, SW cor. NW NE	Location.
HOT SPRINGS COUNTY	
Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16	S.D. 1,300 ft.
LINCOLN COUNTY	
Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7	S.D. 2,800 ft.
LITTLE RIVER COUNTY	
Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-19	Location.
Stephens et al's No. 1 Dierke Lbr. Co., Sec. 29-12s-31w, 150 ft. S, 330 ft. E, NW cor. NE NW	Rigging up.
LOGAN COUNTY	
J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26	S.D.; W.O. 3,570 ft.
MILLER COUNTY	
W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27	S.D. 1,955 ft.
OUACHITA COUNTY	
Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17	Drlg. 1,380 ft.
M. S. M. Oil Co.'s No. 4 Arnold & Doyle, Sec. 23-16-16, 200 ft. S and E, NW cor. SW SE	Set 6-in. 2,018 ft.
PIKE COUNTY	
E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14	T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24	S.D; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23	S.D. 338 ft.
PRAIRIE COUNTY	
Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-6w	Partly rigged up and S.D.
SCOTT COUNTY	
Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26	S.D; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29	S.D; waiting on csg. 1,860 ft.
SEVIER COUNTY	
Tristate Oil Co.'s No. 1 McCown, Sec. 34-8-32, S½ SW	Partly rigged up and S.D.
UNION COUNTY	
Drillers Oil & Dev. Co.'s No. 1 Pickering, 220 ft. N, 668 ft. E, SW cor. NW NE, Sec. 1-17-16	Testing 2,134 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14	Rigging up.
Joe Modisette et al's No. 1 W. D. Webb, Sec. 6-18-13, NE cor. NW SE	Drlg. 2,780 ft.
Sunby et al's No. 3 Perdue, Sec. 33-16-14, 75 ft. S, 150 ft. E, NW cor. Sec.	W.O. 3,247 ft.
WASHINGTON COUNTY (Cable tools)	
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30	S.D. for funds 1,795 ft.
YELL COUNTY (Cable tools)	
Tegmeir & Luckett's No. 1 Falcon, Sec. 36-7-21	S.D. 5,710 ft.
EAST TEXAS	
BOWIE COUNTY	
Hindeman & Bell's No. 1 Merritt (was Maud-Redwater Oil Co.'s), 175 ft. N, 175 ft. E, SE cor. G. W. Hardidge 100-ac. tr. on Floyd Merritt tr. in T. S. McKinney Sur.	S.D. 3,310 ft.
Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur.	S.D. 4,505 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 300 ft. W, SW cor. J. H. Dyer Sur.	Reaming 1,510 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur.	S.D. 3,000 ft.
CAMP COUNTY	
McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 137-ac. tr. in J. H. Murphy Sur.	S.D. 3,600 ft.
CASS COUNTY	
J. F. Morrisey's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur.	S.D. 3,670 ft.
Davis & Pigg's No. 1 Roy Brian, SW cor. Roy Bryan 88-ac. tr., Albert H. Latimer Sur.	S.D. 2,055 ft.
Everets Drlg. Co.'s No. 1 H. W. Whittington, 200 ft. S and W, NE cor. 69-ac. Whittington tr., L Strong Sur.	S.D. 3,922 ft.
Geo. McKamie's No. 1 R. E. Hall, 150 ft. N, 150 ft. W, SE cor. Hall's 117-ac. tr., H. Buckler Sur.	S.D. 4,195 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur.	S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur.	S.D. 2,280 ft.
Olds & King's No. 2 Anthony, John C. Byers Sur.	S.D. 1,750 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur.	S.D. 955 ft.
HARRISON COUNTY	
Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 250 ft. from E line of 105-ac. tr., Findley Sur.	Drlg. 4,025 ft.
Ryan Consolidated Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur.	Derrick.
MARION COUNTY	
Gist, Claunch & Dodson's No. 1 Miller, 1,470 ft. E line, 725 ft. N line, SW cor. H. Fulgran H.R. Sur.	Abnd. 300 ft.
Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur.	S.D. 2,380 ft.
PANOLA COUNTY	
Hoffer et al's No. 1 Cameron Lbr. Co., center 1,306-ac. tr. in W. M. A. LaGrove Sur.	Derrick.
Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur.	Spudded and S.D.
G. A. Davidson's No. 1 Latham, Wm. Rich Sur.	S.D. 1,548 ft.
J. L. Nelson et al's No. 1 J. W. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in Jas. Hanks Sur.	S.D. 2,250 ft.
United Gas Public Service Co.'s No. 11 Werner, 1,163 ft. N, 2,418 ft. W, SE cor. D. B. Lewis Sur.	Drlg. 4,862 ft.
RED RIVER COUNTY	
D. M. Buffington's No. 1 Hossler, E. Hughhart Sur.	S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur.	S.D. 2,280 ft.
SHELBY COUNTY	
E. L. Chapman's No. 1 Pickering Lbr. Co., C. E. Henry (headright)	Set 5 3/16-in. 3,102 ft.
Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur.	Arrng. resume drlg. 3,127 ft.
Harry Elliott's No. 1 Pickering Lbr. Co., 1,000 ft. N, 150 ft. E, SW cor. 361ac. tr., G. H. Patterson Sur.	Rigging up.
K. H. Francis' No. 1 John Mims, Mary Smith Sur.	S.D. 2,750 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 300 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur.	S.D. 2,600 ft.
Henry Maulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur.	S.D. 3,246 ft. (corrected)
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr.	Arrng. to deepen 2,704 ft.
Ridgeway et al's No. 1 Polley, Domingo Gonzales Sur., 3,180 ft. E of SW cor., 180 ft. N at right angles of Polley 457-ac. tr.	Trying to kill fresh water flow 822 ft.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur.	S.D. 20 ft;
Tenant et al's No. 1 J. Henry, C. Z. Walker Sur.	S.D. 3,457 ft.
United North & South Prod. Co.'s No. 1 Windham, 800 ft. W, 1,050 ft. N, SE cor. of Windham 171.5-ac. tr. on A. H. English Sur.	Drlg. 3,225 ft.

CLASSIFIED WANTS

Read by Oil Men Everywhere

RATES

The rates for Classified Advertisements are 35 cents a line for the first insertion and 25 cents a line for each additional insertion. Six words usually constitute a line. The following table will enable you to figure the cost of your advertisement:

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FOR SALE—EQUIPMENT

FOR SALE for a low price. A gasoline powered Sullivan Diamond Core Drill. Write Box E-492, The Oil and Gas Journal, Tulsa, Okla.

200 Amp. Lincoln Arc Welded 220/3/60. Practically new. Price $425.00. 100 Amp. Federal Butt Welder; 220 V. 60 cy. Complete. Excellent condition, $500.00. 12"x14" Chicago Pneumatic Air Compressor. $350.00. 46"x18' Niles Lathe, Quick change; $1,250.00. Also, large stock of lathes, shapers, mailing machines, pipe machines, bolt threaders; etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West Second St., Cincinnati, O.

25 H.P. cylinders, pistons, bed plates, C-11 clutches; also 80 H.P. Bessemer cylinder and flywheel. Nolan Sales Corp., 827 E. First St., Tulsa, Okla.

WILL SELL at sacrifice 100 horsepower B.&W. Water Tube Boiler. Good shape. Act quick. J. W. Hooge, 158 S. Water St., Mobile, Ala.

FOR SALE—One practically new Sullivan "N" Portable Gasoline Engine Driven Diamond Core Drill. Cheap for cash. Also one "Bravo" Diamond Core Drilling Machine. Address P.O. Box 1897, Tulsa, Okla.

FOR SALE—One 4-inch U.G.-1 Worthington 3-stage centrifugal pump—with 9⅝-in. dia. impeller base and coupling. At bargain price. Address Box E-600, The Oil and Gas Journal, Tulsa, Okla.

USED EQUIPMENT FOR SALE

Casing, Linepipe, Boilers, Engines, Compressors, Derricks, Tanks, Separators, Rig Irons, Pumps, Gasoline Plant Equipment, Fittings, Valves, etc.
Low prices and quality merchandise.

USED EQUIPMENT COMPANY
1510 Philtower Bldg.,
Phone 5-3263
TULSA, OKLAHOMA

WILLIAMS Pipe Threading Machine. Cuts 1¼ to 8-in., has 5 HP Westinghouse Motor attached. Like new. Taylor Bros., 829 S.W. Fourth St., Oklahoma City, Okla.

1—165 H.P. Type 10 Bessemer direct driven compressor in A-1 shape; also one 10x8 Clayton twin belt driven compressor, reshopped. Bargain cash prices. Nolan Sales Corp., 827 E. First St., Tulsa.

FOR SALE for $1,000, new Franklin engine No. 3218, sixty horsepower, reverse clutch and pump. Cost $4,200. Located in Moore County, Texas. Used on only one well. Box 980, Ardmore, Okla.

FOR SALE—EQUIPMENT

20 Waukesha engines, heavy-duty, 4-cyl., 120 H.P. Cheap.
MERTES MACHINERY CO.
1622 So. First St., Milwaukee, Wis.

FOR SALE—Practically new Sullivan N. Core Drill at a Bargain. P. O. Box 683, Ft. Worth, Texas.

EQUIPMENT WANTED

WANTED TO BUY—Heavy-duty two-wheel oil country trailer. Zanesville Tool & Supply Co., Zanesville, Ohio.

BUSINESS OPPORTUNITIES

WITH $10,000 CAPITAL—Believe can make a profit of $100,000 in six months time trading in commodities. Time is here now. Years of experience. GREGG SNYDER, care James E. Bennett & Co., 25 Beaver St., New York

SAFETY FIRST
You can own, control, highly profitable production and sale in natural gas. Small capital starts you. $2,000 or $3,000 ample. Proven acreage. Excellent market, four public utility pipe lines buying. Four producing sands, deepest only 600 feet. Write H. B. Buddenborg, Parker, Kans.

OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses, 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

FOR SALE — Topping or Skimming Plant, 1,000 bbls. daily capacity. Will set up ready to run anywhere or if you have the crude will sell a half interest and operate the plant. Plant produces a superior gasoline. Oil Producers Refining Co., P.O. Box 295, Mexia, Texas.

$12.50 BUYS deed part oil 2 Oil Royalties City Pool. Ed Milam, Dept. 27, Oklahoma City, Okla.

EASTERN MARKET OPPORTUNITY
For sale, 100 acres water front. Excellent location for refinery or tank farm, located eastern shore of Maryland, with dock facilities. Good opportunity for oil company desiring eastern market. Can truck products to Maryland, Delaware, Virginia, New Jersey, Pennsylvania, West Virginia, Carolina and New York. Real purchase at $225 per acre. Address owner, Lorie C. Quinn, Crisfield Times, Crisfield, Maryland.

WANTED—Seismic shot holes, shallow production or core drilling contracts. RITTER-DUGAN Drilling Co., Perry, Okla.

WANTED—Finances Complete Well. Prospective Oil Field. Deussen's Anticline. This is no gamble. Thousand acres. Considerable activity. Next big field. John Sigmund, Corpus Christi, Tex.

NEED SOME MORE GOOD CORRESPONDENTS in every city of United States and Canada to co-operate with me in selling producing and nonproducing royalties. Write, James R. Haynes, Grantville, Kans.

WE BUY, SELL AND SWAP
Real Estate and Oil Properties
Jno. T. Cross, Fort Worth, Texas

$8.00 BUYS deed part oil 10 acres, Oklahoma County. MANY WELLS NOW DRILLING. Joe Milam, Dept. 25, Oklahoma City, Okla.

WANTED—Contracts for seismic hand holes. Save money by eliminating bulky machinery. Experienced permit man and geologist. Address Box E-831, The Oil and Gas Journal, Tulsa, Okla.

EXTRAORDINARY OPPORTUNITY
if you have $5,000 to $10,000 to help develop 10,000 acres on G. W. Crouse Survey in Dickson Co., Tenn., 30 miles of Nashville; 3 gas wells drilled in; good geology. Last well estimated 1,000,000 feet. D. H. Reavis, White Bluff, Tenn.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER, ALLWINE & ROMMEL
Suite 418-815, 15th St., N.W.,
Washington, D. C.

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Earle Building, WASHINGTON, D. C.

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JAMES H. BOWEN
Empire State Building, New York

WHEN A NEW IDEA COMES: Write note of it. Send to me for report. I keep it secret. Make, use and patent promptly. Conscientious, Personal Service for 25 years. Manufacturers use my service. Validity and infringement reports promptly rendered. Reasonable fees.
HORACE L. WOODWARD
Victor Bldg., Washington, D. C.

HELP WANTED

SALESMEN

TO SELL complete line of waterproofing and insulation products including pipe wrapping, coatings and asphalt emulsions for oil and gas industry uses.

Selling experience preferred but not necessary if applicant has thorough knowledge and field experience in uses of these products or has established contacts with buyers and uses. Salary and bonus arrangement with unusual future opportunity as this division of our business is developed and extended. Give complete details as to your qualifications and experience in letter of application.

THE FLINTKOTE CO.,
PARK SQUARE BUILDING,
BOSTON, MASSACHUSETTS.

WANTED — District Production Superintendent—must have college education—at least five years' actual field experience with intimate knowledge of machinery, production mechanics, and theory and practice of repressuring sands—must be capable of taking responsibility, of temperate habits and not over thirty-seven years of age. Job North Central Texas handling shallow wells. Starting salary moderate, but will offer good opportunity of advancement with moderate size producing company. Write application with full qualifications and references to Box E-821, The Oil and Gas Journal, Tulsa, Okla.

NEED a few Royalty Salesmen. Good commission, maps circulars furnished. Harry W. Haynes, Grantville Kans.

INVESTMENTS

EXTRAORDINARY OPPORTUNITY TO OBTAIN
five or ten year paid-up mineral lease on LaSalle Uplift, Dimmit County, Texas. 10,000 acre solid block. Address, Owner, Box 656, Houston, Texas.

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Changes in copy must be in our office 10 days in advance of publication date.

Mail your advertisement to the Largest Classified Section in the Oil Industry.

THE OIL AND GAS JOURNAL
TULSA OKLAHOMA

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

INCORPORATE COMPANIES

Organize, re-organize and arrange stock or bond issues. Obtain "security law" permits in all states. We help you raise working capital. Write the Bond House of Illinois, 612 N. Michigan Ave., Chicago, Illinois, Est. 1925.

MONEY RAISING

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

JAMES E. MILLER CO. will co-operate with responsible firms or parties seeking aid in financing projects of higher order. Suite 200, New Brady Hotel, Tulsa, Okla.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, Pa., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security. Electric Bldg., Denver, Colo.

CAPITAL: An exp. dependable broker will aid in financing projects of merit. Amster Leonard, East Orange, N. J.

MONEY RAISING
Inquiries solicited from corporations interested in raising capital through marketing corporate securities.
THE BROOKWORTH CO., INC.,
110 East 42d St., New York.

CORPORATIONS ORGANIZED
Complete corporation and financing service. Assistance in placing stock issues.
C. R. SKINNER
Drexel Building, Philadelphia, Pa.

STOCK ISSUE WANTED by broker with eastern connections and facilities. Organization and financing service offered mining oil, or industrial proposition developed or semideveloped. Principals only. Box E-830, The Oil and Gas Journal, Tulsa, Okla.

CLASSIFIED WANTS

Read by Oil Men Everywhere

ROYALTIES PRODUCTION

PRODUCING royalties in East Texas field for sale at $300 to $600 per acre base. Have buyers for leases, royalties and oil payments in East Texas Field. James Walker, 802 Tower Petroleum Bldg., Dallas, Tex. Phone 7-3361.

MID-CONTINENT OIL ROYALTIES
Royalties Sales Company
Suite 523
105 North Clark St.,
Chicago, Ill.

FURNISHING A REAL SERVICE

to the people of the northern and eastern metropolis who are interested in the oil industry—since 1920.

J. A. Wolfe
OIL ROYALTIES
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FOR SALE CHEAP — Ten-year oil leases; no rentals; also perpetual royalties in Duval County, Texas; several oil and gas fields. References. P. T. Wright, San Diego, Tex.

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I own ½ of the perpetual participating royalty on the following described land:

Hodgeman County, Kansas
Township 24, Range 26
N. ½ Sec. 26
N.E. ¼ Sec. 23
N.W. ¼ Sec 34
S. ½ Sec. 28
E. ½ Sec. 29
Township 21, Range 26
N.E. ¼ Sec. 1
Township 24, Range 25
S.E. ¼ Sec. 1

Trego County, Kansas
Township 14, Range 24
N.W. ¼ Sec. 3

Ford County, Kansas
Township 26, Range 24
S.W. ¼ Sec. 27
Township 25, Range 24
N.E. ¼ Sec. 26

Kearney County, Kansas
Township 21s, Range 35w
S. ½ Sec. 34
(Mid-West has lease on this, and it is in block.)

Ford County, Kansas
Township 25, Range 23
One-half of the 20-year royalty on N.W. ¼ Sec. 15
N.E. ¼ Sec. 16
Township 25, Range 24
One-half of the 20-year royalty on Lots 1 and 2 and the E. ½ of the N.W. ¼ and the N.E. ¼ of Sec. 7, comprising 310 acres, more or less.

LEASES

Barton County, Kansas
S. 60 acres of S.E. ¼ Sec. 27
Township 20s, Range 12w
Rental paid to Sept. 28, 1932, 8 years to run.

Haskell County, Kansas
Township 29, Range 34
S.W. ¼ Sec. 20
E. ½ Sec. 29
S.W. ¼ Sec. 28
All of Sec. 32
E. ½ Sec. 31
Township 30, Range 34
S.E. ¼ Sec. 16
S.E. ¼ Sec. 32
The above Haskell Co. leases are 10-year leases, $1.00 per acre, per year, due March 1, 1932.

Seward County, Kansas
Township 31, Range 34
N.W. ¼ Sec. 4
E. ½ Sec. 1
The above Seward Co. leases are 10-year leases, $1.00 per acre, per year, due March 1, 1932.
This acreage is only one mile from gas production.

Grant County, Kansas
Township 30, Range 35
S.E. ¼ Sec. 6
S.W. ¼ Sec. 5
Rentals $1.00 per acre, payable March 1, 1932; 10 years to run from that date. These leases are practically all proven.

Haskell County, Kansas
Townships 29 and 30, Range 32

I have a 16,000-acre drilling block, leases written on General A-88. Well must be drilled April 1, 1932, 3,000 ft. Rentals start October 1, 1932, $1.00 per acre.

Townships 28 and 29, Range 32w

I have another drilling block, has some holes in it, comprising about 22,000 acres. Same drilling obligations as above.

Finney County, Kansas
Townships 24 and 25, Range 34

I have approximately 17,500 acres, all written in 640-acre leases except five, which are for 320 acres, up. All 50c rentals. No drilling obligation, straight commercial block. No rentals to pay until January 5, 1933.

I own the fee title on the following described lands, on which I would sell the 10-year leases.

Stanton County, Kansas
Township 29, Range 41
S.W. ¼ Sec. 18
E. ½ Sec. 19
Township 30, Range 40
S.E. ¼ Sec. 7

Morton County, Kansas
Township 31, Range 43w
S.E. ¼ Sec. 23
S.W. ¼ Sec. 24
Township 31, Range 42
S.E. ¼ Sec. 34
Township 33, Range 40
N.W. ¼ Sec. 10
Lots 3 and 4 and the E. ½ of the S.W. ¼ Sec. 30, 160 acres, more or less.

Stevens County, Kansas
Township 34, Range 38
E. ½ Sec. 13
Township 35, Range 38
N.W. ¼ Sec. 7

Seward County, Kansas
Township 33, Range 32
N.W. ¼ Sec. 11

I own the S.E. ¼, Sec. 27, Township 34s, Range 39w, Stevens County, Kansas. This quarter has a well on it, making 13,000,000 feet of gas daily. I would consider selling the quarter, which carries with it ⅛ of the royalty.

I also own the N. W. ¼, Sec. 10, Township 35s, Range 38w, Stevens County, Kansas. Fee title. This has an open flow of 8,700,000 feet. The lease belongs to the Trees Oil Company, and I get ⅛ of the royalty, in other words, I own all of the royalty in these lands excepting the ⅞ which the lease calls for. The land is clear.

Under no circumstances will we deal with brokers or promoters. For further information as to prices, etc., address Box 17, The Oil and Gas Journal, Tulsa, Okla.

Chicago Markets Looking for Advance

Spot Market Softening but Bulk of Gasoline Available Is in Good Hands. Q.D.A. and Antiknock Chief Topics of Moment

By Robert C. Conine

Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, Nov. 16.—Last week saw the settlement of several questions of premier importance in the minds of marketers and refiners in Chicago district, and elsewhere for that matter. That is, some matters which have agitated these branches of the petroleum industry for several months have been taken from the realm of rumor and report and are now with us as recognized actualities, as consistently predicated in The Oil and Gas Journal, despite all official negations.

The outstanding happenings, obviously, are the discovery that the more important reason for current low tank car gasoline markets is the result of major interest marketing policies which permit representatives too much latitude in the matter of allowing quantity discount allowances, and which do not bar certain practices discouraged in the American Petroleum Institute's code of marketing practices; and, more important from the refiner's viewpoint, the announcement of Ethyl Gasoline Corp. that it will sell its licensees antiknock fluid for use in their regular grade gasoline beginning March 1, 1932.

Quantity Discount Troubles

In a keenly competitive market throughout Chicago district, the marketers, of major and minor description, decided upon a policy of expanding the scope of their operations by offering buyers larger and larger margins of profit. From Q.D.A.'s guaranteeing the buyer marginal spreads of 2½ cents below the posted service station quotations, plus rental, and later, plus hauling and handling allowances, the marketers raised their ante progressively until now the point has been reached where the only cause for satisfaction remaining is the fact that if those too zealous marketers, who have disrupted the contract business, want to go any farther they will have to enclose a check with their gasoline deliveries. When a jobber in Chicago district sets about to compare the relative merits, from his standpoint, of the contract and the spot business, he invariably sets down a marginal spread of 6 cents as a basis for his calculations. He has to do this, because how else is the retailer going to be in a position to give away a "beautiful glass water pitcher or four glass tumblers, pink or green, with lovely etched design, absolutely free with the purchase of seven gallons or more of gasoline"? And how is the service station operator going to pay wages to a half dozen or more kimono-clad young damsels who toss handbills in every passing automobile? It looks very much like the marketers, who have been conducting a policy of retrenchment and firing in their own organizations, have taken on a lot of new help without knowing it.

However, the outlook is not entirely dark. Several of the major interests have held a strong check on their marketing departments, and with the good will which has been secured in their favor, through consistent advertisement of quality rather than price, now holding them in good stead, are able to get business with offers of marginal guarantees of no more than 4 or 5 cents.

Spot and Contract Business

The refiners have arrived at the time when they enter the marketing field with new contracts, that is, those refiners who have not bartered their porridge for two and three years to come (as in at least one important case). It is a notable indication and a very good sign that these contracts specify smaller marginal guarantees than their preceeding agreements and it is also to be considered significant that the jobbers are committing themselves to smaller quantities of material, with the inference, obviously, that the open market will be relied upon much more than in the past season.

It has been pointed out repeatedly, perhaps needlessly, that the large volume of contract business in spite of greatly depressed spot markets can mean only one thing, that is, the marginal guarantees which have been given to jobbers are not at all the modest ones made public by the parties concerned. This was made evident when few jobbers took the alternative of buying at a quarter of a cent and three-eights of a cent below the low of a daily publication, when their contracts were reported to give a spread of no more than 5 cents or 5½ cents. Taking the U. S. Motor market at the lowest price considered representative today, that is, 4 cents to the reseller and 4⅛ cents to the trade, and carrying out the calculation made by the jobber we find: The service station posting on the regular grade is 15 cents in Chicago. Subtracting the state gasoline levy of 3 cents brings the price to 12 cents, and deducting the Group 3 freight rate of 2.38 cents, we see that the jobber who has a contract is paying 3.62 cents when the 6-cent marginal spread is considered.

It may be pointed out here that the 6-cent marginal spread is the all-important factor. There is every indication that the jobbers are well supplied with gasoline in Chicago district and are able when drawing upon their commitments, which are found to be quite expansive and flexible in spite of the strict wording on the contracts, to take a fling at the brokerage business and pick up from an eighth of a cent to a quarter of a cent with little effort by moving their surplus material to buyers not favored with contracts. "Spot market" buyers with favorable connections with contract buyers can obtain material in the district at no more than 4 cents and have been doing so for months. And the fact that this situation has been called to the attention of refiners and major marketers time after time has had no effect in remedying the evil until now. And it may be admitted here that information coming from reliable sources discloses that not all of the refiners are attempting to cut down the excessive marginal spreads previously offered. But the fact that most of them are trying to regain a modicum of sanity in their contract business is highly encouraging.

Information reaching Chicago district oil trade circles from the Mid-Continent refining centers is not quite clear as to what is actually going on in that section of the country in the matter of crude oil storage, crude oil runs to stills, gasoline stocks and the extent of cracking operations. So far the weekly reports of the American Petroleum Institute covering these points have been more encouraging than otherwise, but one can never predict what will happen tomorrow and the stage is set for almost any kind of a climax or anticlimax.

Spot Market Softening

Spot gasoline tank car markets are showing a slight softening, and this condition has been variously analyzed. Some of the marketers contend that the 1-cent advance in the tank wagon and service station postings throughout the territory had the effect of concentrating a movement against the open market structure. However, the most pessimistic feel that the gasoline tank car markets will be stabilized around a 4-cent posting for U. S. Motor of no octane specifications, and there is no thought the market will go below this, according to present indications.

Refinery Gasoline in Good Hands

The note of optimism which is heard above the naturally more audible adverse factors, arises to a large extent from the fact that the bulk of the gasoline available (if the price is right) in the territory is in much better hands than was the case during the turbulent period which ended with a collapse of the price structures in all the refined products several months ago. As evidence of the fundamental soundness of the current gasoline tank car open markets in Chicago district, it may be pointed out that an intensive search for "loose material" in these markets brought to light nothing more than that one seller is offering 15 cars of U. S. Motor gasoline of no octane specifications to the trade at 4¼ cents; 10 cars of 60-62 gravity, 420 end-point gasoline to the trade at the same figure, 4¼ cents, and that there are 30 cars 60-62 gravity, 400 endpoint material offered to the trade at from 4⅜ to 4½ cents. Another seller is offering 10 cars of U. S. Motor gasoline to the brokers at 4 cents, and 10 cars of the 400 endpoint material at 4⅜ cents.

The position of gasoline stocks in the country, reported crude oil runs to stills and the figures on production of cracked gasoline, as indicated by the A.P.I. weekly report, figured on the constructive side last week. Although gasoline stocks had mounted 626,000 bbls., it was pointed out that the current stocks are 3,228,000 bbls. below last year's estimate for the same period, and may well be considered as good working stocks. Crude runs to stills showed a decrease as did the production of cracked gasoline. Experience has shown, however, that if the refiners do not adhere closely to the policy of curtailing operations the increase in stocks is much more rapid than in years past when "working stocks" for the industry were defined.

Other Territories Advance Postings

The tank wagon gasoline markets have been advanced in Ohio, Nebraska and the Philadelphio district in Pennsylvania. Advances by Standard Oil Co. of Ohio, Standard Oil Co. of Nebraska, and Atlantic Refining Co. were for 1 cent. The eastern seaboard markets were advanced half a cent, both in gasoline and kerosene tank car postings. To date the price obtainable at Pennsylvania refining points still makes it possible for Chicago brokers to handle this material under the current quotations in Chicago district. It has been intimated that the Pennsylvania gasoline has a poor octane rating, but this is incorrect as this material not only has an endpoint of 410° and below, but has been found in all cases investigated to be gasoline of 64 octane number, at least.

Second Grade Antiknock Fluid

The announcement of Ethyl Gasoline Corp. that beginning March 1, 1932, it will supply its licensees with antiknock fluid for use in their regular grade gasolines, while not as much of a surprise as may be supposed, has thrown refining and marketing circles into the work of deciding without delay the important point of stabilizing the octane rating of the gasoline marketed from the regular grade pumps. It is also considered as the signal to the automobile manufacturers to "go ahead" with higher compression ratios and decarbonizers.

Quite correctly the complaint is made in many quarters that it is foolish to improve the antiknock rating of the regular grade of gasoline when the gasoline now sold will operate a majority of the automobiles satisfactorily, and the premium grade, with 74 octane number will not cause knocking in any but the engines which have built up a considerable carbon deposit or which have a compression ratio in the neighborhood of 6 to 1. It is also said, very logically, that none but the most reckless automobile manufacturer would eliminate his low compression engine completely in favor of one requiring a premium grade of fuel for operation.

But it cannot be denied that refiners have been forging ahead, whether or not motivated by their sales departments, in the matter of increasing the antiknock quality of their gasoline by expanding and improving their cracking facilities. After March 1 of next year they will have the opportunity of adding the "Q" antiknock compound offered by Ethyl Gasoline Corp. to obtain higher octane ratings. This compound differs from Ethyl compound very slightly in formula and requires a change in maximum permissible concentration from 3 c.c.s to 1½ c.c.s. A different dye will be used. When the matter of a "second grade Ethyl" was discussed with several of the more important eastern refiners on the day before the announcement was made by the Ethyl corporation, the consensus was that the refiners were putting themselves, or had already done so, in a position to produce the type of antiknock gasoline generally sold from the regular pumps in the East, that is, of around 70 octane number, and that it "would certainly be to the interest of Ethyl Gasoline Corp. to permit the addition of tetraethyl lead to the second grade of gasoline."

Refinery construction work continues unabated in Chicago district. One manufacturer has sold 22 furnaces of a type used in connection with cracking units in recent months, and a firm of refinery engineers has received orders from the district for at least five expensive units for processing pressure distillate. Features of the unit are conservation of

(Continued on Page 81)

CLASSIFIED WANTS

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Eastern Gasoline Market Strengthens

Firmer Retail Markets Reflect Refinery Advance. Gulf Export Quotations Advanced on Both Gasolines and Kerosene During Week

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Nov. 16.—Stabilization of eastern refinery gasoline markets has been achieved with a general realignment of prices to the basis established by a number of refiners who advanced their quotations one-half cent at the close of the previous week, and the outlook in the motor fuel division for the remainder of the year has brightened appreciably. Export gasoline and kerosene were advanced at the Gulf.

While gasoline has been the outstanding performer since the recent price mark-ups on crude, the remainder of the market, with the single exception of cylinder oil, has shown a sympathetic steadying, and the present market picture is more satisfactory than for a number of months.

The importance of this stiffening tendency will be readily apparent when it is considered that leading companies had drastically revalued their inventories to record low levels prevailing earlier in the year. With year-end inventory but six weeks off, the position of the East Coast industry has been substantially improved by recent price advances, and while leading interests here are not inclined to let their optimism run away from them, it is considered possible prices may strengthen in other divisions of the market before the close of the year, reflecting the higher producing costs resulting from the recent crude oil price advances.

East Coast refiners are continuing to scale their plant operations downward, in an effort to further consolidate the improved statistical position resulting from recent price advances. Operations at refineries in this area were at but 73.7 per cent of capacity during the week ended November 7, with runs averaging 467,300 bbls. of crude daily, against average operations of 75.2 per cent of capacity, and daily runs averaging 476,000 bbls. during the previous week. A further slackening of operations is anticipated before the end of the year, in keeping with the seasonal slackening in demand, already apparent. While preliminary estimates indicate the seasonal drop this year will not be as great as in previous years, refiners will nevertheless endeavor to have their surplus stocks at an absolute minimum, consistent with safety, by the time the spring season rolls around.

Refinery Gasoline

Notwithstanding a cut in refinery operations, stocks of gasoline held by East Coast refiners increased slightly during the week ended November 7, totaling 4,116,000 bbls., a gain of 185,000 bbls. during the week. This is not an accurate reflection of the seasonal easing off in consumption, however, but reflects heavier arrivals of motor fuel bought in the cargo market in California and at the Gulf Coast, where eastern interests bought heavily several weeks ago when stocks were offering at distressed prices.

The refinery market in the local area showed further improvement, and prices were moved up a half cent by all refiners which had not met the advance initiated by Tide Water during the previous week. Principal sellers are now quoting U. S. Motor gasoline in tank car lots at refineries at 6 cents, with no guarantee of octane rating, and 6¼ cents to 6½ cents for gasoline of 65 octane number and higher. While buyers are naturally seeking the higher octane number fuel, refiners in this area, as a group, have not yet readjusted their refining facilities to the point where they are willing to make a sharp differential between motor fuel of 65 or better octane number, or with a lesser antiknock rating, although the demands of buyers appear to be slowly forcing such a cleavage in the manner of quoting spot gasoline.

There has been some inquiry for gasoline for shipment from the Gulf to New York, but buyers are unwilling to go over 4 cents, Gulf, and sellers are unwilling to book at that figure, even with no octane specifications.

Tank Wagon Gasoline

Aside from a few routine changes in the Pennsylvania area, the tank wagon and service station situation in the East has remained unchanged. The latest firming up in the position of refinery gasoline came at an opportune time and has halted the price cut tendency which was making itself apparent in some parts of the territory.

With the refinery market apparently headed for still higher ground by the close of the year, there is a general feeling that the next mark-up in the tank car price will be reflected in tank wagon and service station prices.

Gallonage has been well maintained in tank wagon markets, although a slight easing off tendency has been discernible in some sections, which normally reflect the inroads of winter earlier than the seaboard cities.

According to state tax figures, gasoline in New York State including both taxable and nontaxable motor fuel) aggregated 169,019,374 gallons in August, the latest month for which detailed data is available, comparing with 169,276,972 gallons in the previous month and 157,629,445 gallons in August, 1930.

Kerosene

Tank car movement of kerosene showed considerable improvement, and the market was steady at the recently advanced price of 5½ cents for 41-43 water white, in tank car lots, f.o.b. refinery terminals.

Tank wagon movement of kerosene was also on the increase, with demand particularly marked in up-State New York and throughout the New England area, where considerable cold weather, accompanied by snow in some sections, was experienced. No change was reported in the retail price structure.

Domestic Heating Oil

Furnace oil volume continues to show seasonal expansion, and the market is steady, with prices unchanged. Considerable quantities of furnace oil are scheduled to reach eastern seaboard markets from California and the Gulf Coast area during the winter, it is reported here.

Lubs

No further price changes developed in the cylinder oil market, but, as was natural in view of the general reductions of the previous week, the market continued in unsettled position, with buyers little inclined to buy for forward requirements until some semblance of stability has been restored to the price basis. Refiners were showing slightly stronger price views, and it appeared probable the market would rally at present price levels.

Export buying of red and pale oils continues at a low ebb, but an increasing demand from domestic industrial consumers has been discernible, and the market continues steady at prices which have thus far held uniform throughout the year. Refiners reported a slight pickup in tank car movement on these oils.

Fuel Oil

Refiners are talking a stronger market for bunker "C" oil, in line with higher crude costs, but thus far no advance has materialized and the posted price continues unchanged at 70 cents per barrel, bulk, f.o.b. New York and New Jersey refinery terminals.

Despite a cut in refinery runs, fuel and gas oil stocks showed a slight increase during the first week of the current month, totaling 10,378,000 bbls. on November 7, against 10,223,000 bbls. held at the close of the previous week, the foregoing figures, of course, applying only to East Coast refineries.

Notwithstanding recent unfavorable developments in the fuel oil situation, large scale buyers have come into the market in a large way for their 1932 requirements, and principal refiners have their business pretty well lined up for the coming year. The business is being taken on open contracts, with a guaranteed top price for the year, and provision for deliveries to be made at prices prevailing on date of delivery. This form of contract, naturally, is all one-sided, but serves the useful purpose of continuing contacts, but any radical change in the oil market situation, resulting in sharp upward price movements in crude oil and products, would find the refiners "holding the bag" on their bunker and Diesel oil contracts.

Gas Oil

More firmness is discernible in the gas oil market, and refiners are disposed to adhere rather closely to the posted quotation of 4 cents for 28 gravity plus recycled oil in tank car lots, f.o.b. refineries. Previously, this quotation has been shaded rather freely in spot sales.

While utility companies are still taking gas oil in considerable quantities for use in manufacturing gas, competition of bunker oil in this field is apparently a growing factor. Substitution of bunker oil for the lighter and higher priced gas oil has passed beyond the experimental stage, and refiners expect there will be a steady trend toward the use of the heavier oil on the part of gas manufacturing companies.

Low grade gas oils continue to move into consuming channels in good volume on domestic heating oil contracts.

Diesel Oil

While the market position has stiffened somewhat refiners have not yet advanced their posted price for Diesel oil and there appears to be some question whether an advance would be feasible before the close of the year.

The present quotation of $1.40 per barrel, in bulk, f.o.b. refinery terminals located in the New York Harbor district, is the lowest price on record, but the East Coast Diesel oil market is now guided not so much by domestic crude costs as by Rumanian and Russian competition in European ports, and thus far there has been no lessening of the selling pressure from these quarters.

Paraffin Wax

Contract movement of wax picked up a little, but the volume of spot sales continued disappointing, and the market remained in rather easy position.

While refiners in the East have been endeavoring to establish a stronger price basis for fully refined grades of wax, they have found this extremely difficult, as there are still some weak holdings available at concessions from quoted prices.

Domestic buyers continue to mark time, pending further developments, and export buyers in most instances have adopted a similar attitude. There were no changes in prices reported on any grades.

Petroleum Exports

Following the exceptionally heavy export movement of refined products during the previous week, shipments destined for foreign markets fell off considerably last week, and were down to more nearly normal levels.

The following table shows principal exports of refined petroleum products from the port of New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Nov. 7	Oct. 31	Oct. 24
Gasoline	65,000	70,000	305,000
Naphtha	310,000	880,000	160,000
Kerosene	33,000	22,000	43,000
Fuel oil	8,000	330,000	43,000
Lubricating oil	785,000	1,245,000	981,000
Petroleum, refined	1,360,000	1,502,000	1,245,000
	Pounds		
Petrolatum	34,000	35,000	.....
Paraffin wax	1,225,000	5,340,000	770,000
Refined	.....	260,000	223,000
Scale	130,000	320,000	150,000
Lubricating grease	685,000	1,130,000	1,001,000

Export gallonage for the current year will show a substantial reduction compared with 1930 and previous years, and export operators here continue pessimistic regarding the outlook. Considerable of the business this year has consisted of contract shipments by large integrated companies with foreign marketing affiliations and subsidiaries, and the volume handled by independent operators has dwindled appreciably. Steady increases in foreign refining capacity would seem to indicate this trend will continue.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended November 7 totaled 1,602,000 bbls., a daily average fo 228,857 bbls., compared with 2,086,000 bbls., a daily average of 298,000 bbls. for the previous week and a daily average of 253,258 bbls. for the month of October. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	165,000
New York	928,000
Philadelphia	186,000
Others	258,000
Total	1,537,000
At Gulf Coast Ports—	
New Orleans and Baton Rouge	65,000
Total	65,000
Daily average	9,286
At Atlantic and Gulf Coast Ports—	
Total	1,602,000
Daily average	228,857

Distribution of total imports is as follows:

Crude	1,096,000
Gasoline	91,000
Fuel oil	415,000

Plans for a world accord on crude production, taking in Venezuelan and other South American producers, it is expected, will be reflected in import totals during the coming year. While official announcement regarding the world curtailment program has not yet been made, it is believed the endorsement of Rumanian producers for such a plan, announced a short time ago, will be followed by definite steps looking to the prorating of world oil pools (with the exception of those now under the control of the Soviet) with a view to the re-establishment of a sounder statistical basis for the entire industry, and the elimination of wasteful overproduction and consequent marketing at less than replacement costs.

Gulf Export Market

The Gulf export market has witnessed a steady strengthening tone, and prices are from three-eighths to five-eighths cent higher on gasolines and one-quarter to one-half cent higher on kerosene.

Current quotations in the open market at the Gulf are as follows: Gasoline, 58-60, U. S. Motor, 4½ cents; 60-62, 400 endpoint, 4⅝ cents; 61-63, 390 endpoint, 4⅝ cents; and 64-66, 375 endpoint, 5 cents; kerosene, 44 prime white, 4 to 4¼ cents; 41-43 water white, 4¼ to 4½ cents.

There were no cargo fixtures reported, and there were some indications foreign

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The photograph below shows one of several installations in which Darling Gate Valves are used on the Gulf cross-country pipe line running from Oklahoma to Pittsburgh. Many other cross-country pipe lines of major oil companies are similarly equipped with Darling Gate Valves.

Better and longer service, ease of operation and quick repairs in the field, make the Darling Valve of Forged Steel or Semi-Steel a favorite.

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California Distributors:
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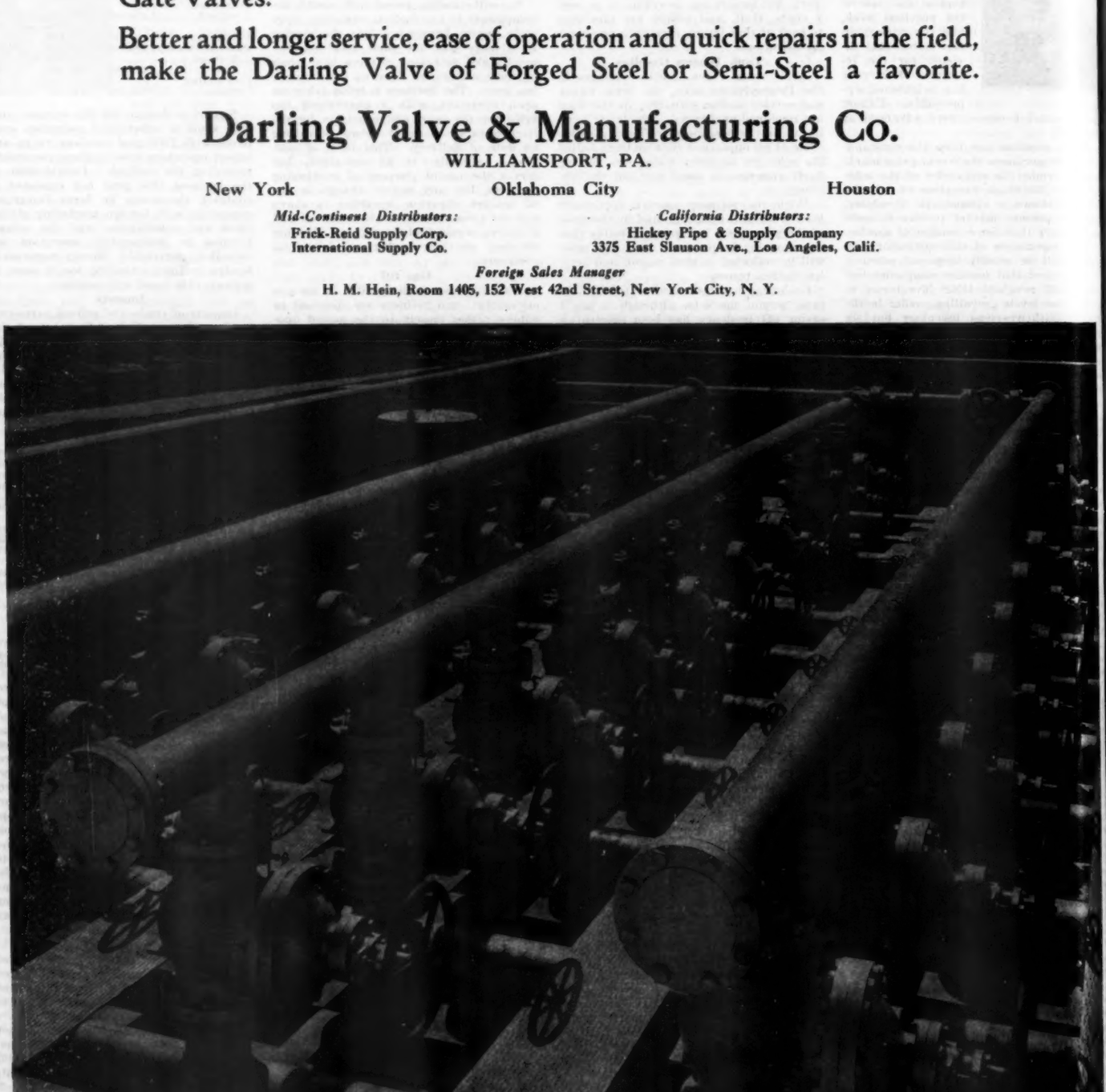
Foreign Sales Manager
H. M. Hein, Room 1405, 152 West 42nd Street, New York City, N. Y.



operators planned to stay out of the market until the permanence of the present advance was established. From reports in trade circles it appeared likely the market would probably advance fractionally further before the upward movement was halted, and traders here believe refiners will be successful in establishing and maintaining the market at higher levels.

Trading in Venezuelan and Mexican crude was reported at a standstill, although it was expected foreign buyers would come into the market shortly with contracts for these crudes to cover part of their 1932 requirements.

With initial steps taken for the calling of an international conference on the petroleum question, the entire export market is in a state of flux and it is believed actual trading operations will be substantially curtailed until the world situation is clarified further.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended November 7 totaled 357,000 bbls., a daily average of 51,000 bbls., compared with 97,000 bbls., a daily average of 13,857 bbls., during the previous week, and a daily average of 52,129 bbls. for the month of October. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
New York	285,000
Other ports	None
Total	285,000
Daily average	40,714
At Gulf Coast Ports—	
All ports	72,000
Daily average	10,286
At Atlantic and Gulf Coast Ports—	
Total	357,000
Daily average	51,000

All of the week's receipts of California oil consisted of gasoline.

Shipments of California refined products for Atlantic and Gulf Coast ports during the week (with identity of owner of tanker moving the oil where such owner is an oil company) were as follows:

For New York—80,000 bbls. of gasoline on the Betterton (Tide Water-Associated Oil Co.).

For Philadelphia—116,200 bbls. of gasoline on the Sun (Sun Oil Co.).

Some delay in shipments of California gasoline now afloat for the East Coast was occasioned by landslides which closed up the channel in the Panama Canal, holding up vessel traffic for several days.

Charter Market

A quickening in export demand for American petroleum was indicated by several tanker fixtures reported during the past week, including shipments from California, the Gulf, and New York.

Tanker rates continue low, however, and the available tonnage supply still continues in excess of the demand, with a considerable number of American bulk oil carrying vessels still laid up.

Fixtures reported during the week were as follows:

Motorship Norvinn (Norwegian), 9,000 tons, clean, California to France, 14/-, November loading.

Motorship Oilreliance (British), 8,500 tons, clean, Tuapse to Dunkirk and Rouen, 7s.6d., November loading.

Steamer Cities Service Fuel (American), 3,296 tons net, Gulf to North of Hatteras, reported fixed "about 17 cents," November loading.

Steamer Arcola (Italian), 7,500 bbls., clean, Gulf to the Adriatic, 9/6, December loading.

Stemaer Frontenac (Norwegian), 4/4,-500 tons tar, New York to Blaye, $9,250, November loading.

Steamer Nyholt (Norwegian), 4,807 tons net, Gulf to Port du Bouc, two trips, 8/6, option Curacao or Tampico loading, November-December loading.

Steamer Solstad (Norwegian), 3,435 tons net, clean, Constanza to Hamburg, 7/-, November loading.

Motorship Bueston (Norwegian), 3,041 tons net, or sub., Constanza to Thameshaven or Preston, 6/9, option of a second port 1/-, extra, January 1-15 loading.

CHICAGO MARKETS LOOKING FOR INCREASE

(Continued from Page 78)

octane rating and better gum and color stability, and the capacity of the units ordered for Chicago refineries is 17,000 bbls. of pressure distillate daily, each.

Look for Further Crude Advances

The trade is expecting further crude advances shortly and another boost in the tank wagon and service station gasoline markets. The latter advance, it is said, would place the tank car markets on the first really firm foundation they have had this year. The marketers are not looking for much trouble from the trackage station and other price cutting operators who have in the past been assisted by their activities in respect to gasoline taxes. The gasoline tax evasion problem, thanks to the work of the Illinois Gasoline Tax Evasion Committee which has been pushed vigorously by Frank V. Martinek, of Standard of Indiana, and his associates, has become greatly simplified. The "Big Six" in gasoline bootlegging, upon which Mr. Martinek trained his guns, find their two leaders pleading guilty to indictments charging conspiracy to evade the gasoline state tax, and the four remaining members bargaining for degrees of leniency. Scores of "little fish" form lines at the offices of States Attorney Swanson, who has detailed four assistants to the sole duty of stopping gasoline tax evasion. This is not exaggeration, but the plain recital of how the work against gasoline bootleggers is progressing in the district.

Gasoline Tank Car Markets

The gasoline tank car open markets showed a slight softening in price. U. S. Motor gasoline, as well as the higher tests, however, were not available on the spot market in any considerable quantities. Materials available were quoted as follows: U. S. Motor, 4⅜ to 4⅝ cents; 60-62 400 endpoint gasoline, 4⅝ to 4⅞ cents; 64-66 375 endpoint material, 4⅞ to 5⅛ cents; 68-70 360 endpoint gasoline, 5¼ to 5½ cents. The last named was unchanged in price.

Kerosene Markets

The kerosene tank car markets reflect a betterment in export business and advances elsewhere, but are unchanged in price. The 41-43 water white material is offered at 2⅛ to 2¼ cents, and the 42-44 water white kerosene is quoted at 2¼ to 2½ cents.

Gas Oils and Fuel O'ls

The gas oil and fuel oil markets continued to firm up in spite of the influx of cheap high cold test materials. Sellers are extremely hesitant to commit themselves very far ahead, and while the weather has been in favor of the gasoline markets and against the burning oil markets, it is felt the season for maximum consumption of the heavier distillates is not far off. The 32-36 zero gas oil advanced to a range of 1⅞ and 2⅛ cents, and the 38-40 straw distillate moved up to 2 and 2¼ cents. The other postings and the fuel oil markets remained unchanged.

One of the materials offered by a former cut price source has a gravity of 15-18, viscosity of 1.300 at 100° F., 150° flashpoint (Pensky-Martins), below zero pourpoint, 0.75 sulphur, and comes under the asphalt rate of 0.88 cents per gallon, making the price about 30 cents Group 3. However, it is understood this material may be bought for over the winter.

CANADIAN FIELDS

(Continued from Page 44)

No. 1 Keho, LSD 2, Section 17-11-22w4, is drilling out cement set to overcome water intrusion from the Sunburst sand. The test got 750,000 feet of gas and a promising show of high-grade crude oil at the Ellis-Madison contact around 4,914 feet and will now be drilled into the producing horizon.

Border Tests

In the Milk River district, southern Alberta, Commonwealth Petroleum's No. 1, LSD 9, Section 9-3-15w4, is making hole very slowly in the lower Devonian below 5,050 feet. The formation still shows traces of oil and gas.

Gasser at Brooks

In the Brooks district, Canadian Western Natural Gas, Light, Heat & Power Co.'s No. 4 test has got the gas sand around 1,250 feet and is being drilled into production. Casing was cemented around 1,200 feet. A new 6-inch line is being laid to connect the new well with the Brooks gas system. It is expected production will run around 250,000 feet a day.

Wainwright Deep Test

In the Wainwright Field, east central Alberta, Montreal-Alberta Petroleums' No. 1, LSD 2, Section 15-45-7w4, has resumed drilling around 2,300 feet and will be continued as a deep test.

British Columbia Tests

In the Sage Creek district, Crow's Nest-Glacier Oil Co.'s No. 1, which has been standing at 3,260 feet, is to be finished with diamond drill. Equipment is now being rigged up. Victor Freeman, formerly with International Pipe Lines, Ltd., is in charge of operations. At its present depth the test had strong shows of light crude.

Manitoba Gas Test

In the Manitou district, southwestern Manitoba, Commonwealth Petroleums' No. 2, LSD 2, Section 26-2-9-wPM, is preparing to resume at around 900 feet. The test got a small gas flow at 600 feet and an oil show was reported between 725 and 800 feet. Commonwealth's No. 1, LSD 2, Section 23-2-9wPM, was carried to 1,200 feet, getting a fair gas production.

Ontario Drilling

In Middlesex County, Ontario, Union Gas Co.'s No. 1 Ekfrid, Concession 5 South, Ekfrid Township, has been definitely abandoned as dry. Union's No. 2 Ekfrid, Lot 10, Concession 6, Caradoc Township, is drilling around 1,150 feet. Location is about 10½ miles north of No. 1 and about 18 miles northeast of the Southern Ontario Gas Co.'s gassers near Newbury. Union's No. 3 Ekfrid has been located in northeast corner of Lot 13, Concession 3, Ekfrid Township, a couple of miles north of Appin, about 7 miles northwest of No. 1 and about 8 miles southwest of No. 2.

In Kent County, Olga Oil & Gas Co.'s No. 3, Doyle farm, Lot 19, Concession 8, Raleigh Township, has been finished. The well showed between 100,000 and 140,000 feet a day from a number of sands between 1,550 and 1,650 feet and was shot with 300 quarts, somewhat increasing the production. It is claimed to have an open flow between 500,000 and 600,000 feet a day with a little oil, probably about 4 bbls. There is also considerable salt water. Olga's No. 4 has been located in northeast quarter of Lot 18, Concession 9, Raleigh Township, and Frank H. Stover, drilling contractor, is moving in his equipment.

Ralph Dawson, who recently completed a small gasser on the Smart farm, Lot 4, Concession 16, Tilbury East Township, is reported locating a second test.

In Rainham Township, Haldimand County, a local syndicate is doing some shallow drilling for gas south of Fisherville. Three tests have been put down, one of which is reported to have got a gas show estimated at 70,000 feet.

Calgary Oil Prospect

The possibility of an oil field close in to the city of Calgary, Alberta, may be tested shortly by Victoria, British Columbia, interests headed by E. Hodson, geologist, of Victoria. A tentative location is reported on the Dr. A. B. Singleton farm, 4 miles southeast of Ogden.

Gas at Montreal

The existence of gas within the city limits of Montreal was indicated by a natural gas explosion which wrecked the home of Joseph Holoka in the east end of the city. Holoka drilled in the cellar for water and at 60 feet depth encountered water unfit to drink. He capped the pipe, but opening it a week later found an accumulation of gas. While he was installing piping to utilize it the gas exploded, the house being wrecked and the family of seven all more or less injured.

ROCKY MOUNTAIN AREA

(Continued from Page 44)

perial Natural Gas Co.'s No. 1 Danielson, C SW NW Section 21-35-1w, is rigging up, and Iatha-Idaho's No. 2 Newman, C NE NW Section 30-32-1w, is spudding at 300 feet. Munger-Tiefor's No. 1 Kaston, SW NW SE Section 27-35-1w, is drilling at 571 feet. All three of the above are operations not heretofore reported.

IDAHO

R. J. Berry and others' No. 1 Kramlich, Section 5-9n-4w, Crystal Dome, in Payette County, cemented the 8⅝-inch at 2,050 feet and drilled into the sand which in a near-by well had a gas blowout several months ago and found sulphur water. It is drilling ahead at 2,070 feet. The offset gas well was lost before it was gauged.

SOUTH DAKOTA

Gypsy Oil Co.'s No. 1 Hunter, C NE SW Section 28-3n-16, Wall structure, Pennington County, is being abandoned in dolomite, probably of Mississippian age, at a total depth of 5,001 feet. It had water at 4,905-29 feet.

Pipe Line Runs

Average daily pipe line runs for the week ended November 14:

	Bbls.
WYOMING	
Salt Creek	22,130
Big Muddy	1,760
Greybull	10
Dallas-Derby	920
Dutton Creek	80
Elk Basin	560
Ferris	30
Frannie	870
Grass Creek	2,110
Hamilton Dome	940
Hudson	160
LaBarge	910
Lance Creek	260
Lost Soldier	4,080
Oregon Basin	500
Osage	1,180
Pilot Butte	40
Rock River	1,750
Poison Spider	80
Teapot	20
Total Wyoming	38,390
MONTANA	
Buckley-Border	560
Cat Creek	880
Dry Creek	290
Kevin-Sunburst	4,660
Lake Basin	70
Pondera	1,370
Total Montana	7,830
COLORADO	
Florence	320
Fort Collins	970
Iles	960
Moffat	670
Orchard	680
Rangely	20
Tow Creek	300
Total Colorado	3,920
NEW MEXICO	
Rattlesnake	715
Hogback	500
Table Mesa	80
Artesia	600
Cap Rock	700
Hobbs	37,123
Jal	1,025
Lea City	2,600
Eunice	485
Total New Mexico	43,828
Total Rocky Mountain area	93,968
Total previous week	93,735
Difference	233

OKLAHOMA GAS REDUCTIONS

Gas rate reductions for 14 northeastern Oklahoma cities were announced during the week. The companies were the Union Public Service, which serves Dewey, Beggs, Nowata, Chelsea and Delaware; the Bartlesville Gas & Electric Co., serving Bartlesville, and the Consumers Gas Co., serving Miami, North Miami, Picher, Welch, Cardin, Douthat, Blue Jacket and Commerce. The rates were reduced to $1 for the first 1,000 feet, 45 cents thereafter and as low as 35 cents for industrial purposes.

JOHN E. JUDSON DIES

NEW YORK, Nov. 16.—John E. Judson, vice president of Ford, Bacon & Davis, died at his home at Stamford, Conn., after a lingering illness. Mr. Judson, who has been identified with the engineering firm for the past 14 years, was in charge of the firm's business department, but had not been active for the past few years, due to the condition of his health.

Why it always "works" the same

Welders who use Roebling Welding Wire invariably say that one of its outstanding characteristics is its absolute uniformity—the fact that it always "feels", always "works" the same.

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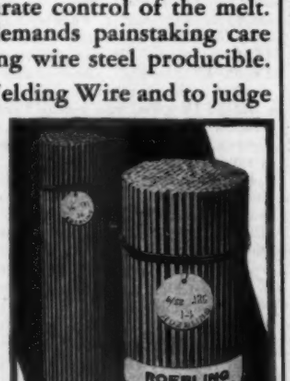
We invite you to test Roebling Welding Wire and to judge its quality for yourself. Samples will gladly be furnished by our distributor, Frick-Reid Supply Corp. Made in gas and electric types for general oil field use and pipe line construction.



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Welding Wire Distributors for Oil Fields
FRICK-REID SUPPLY CORP.
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ROEBLING WELDING WIRE

EAST TEXAS FIELDS

(Continued from Page 25)

Aiken, top sand 3,573 feet, initial production 56 bbls. in 15 minutes through open tubing, total depth 3,633 feet. Same company's No. 1 J. T. Jeter, top sand 3,588 feet, initial production 42 bbls. in 15 minutes through open tubing, total depth 3,601 feet. Fain & McGaha's No. 4 Clements, top sand 3,590 feet, initial production 125 bbls. per hour through three-fourths inch tubing choke, total depth 3,621 feet. F. & M. Drilling Co.'s No. 1 Fisher, location abandoned. Falvey and others' No. 1 Rodden, top sand 3,523 feet, initial production 160 bbls. per hour through open tubing, total depth 3,540 feet. F. H. E. Oil Co.'s No. 1 J. Christian, top sand 3,622 feet, initial production 125 bbls. in 30 minutes through open tubing, total depth 3,652 feet. Galvey Oil Corp.'s No. 2 Sheppard, top sand 3,526 feet, initial production 75 bbls. per hour through one-half inch tubing choke, total depth 3,558 feet. Humble Oil & Refining Co.'s No. 3-B Johnson, top sand 3,605 feet, initial production 100 bbls. per hour through three-fourths inch tubing choke, total depth 3,633 feet. Same company's No. 3 Willingham, top sand 3,621 feet, initial production 28 bbls. per hour through three-fourths inch tubing choke, total depth 3,661 feet. Macmillan and others' No. 1 G. Jones, top sand 3,535 feet, initial production 30 bbls. per hour through three-fourths inch tubing choke, total depth 3,591 feet. Premier Oil Co.'s No. 1 J. T. Jeter, top sand 3,592 feet, initial production 27 bbls. in 15 minutes through three-fourths inch tubing choke, total depth 3,608 feet. Roeser & Pendleton's No. 4 B. Rodden, top sand 3,542 feet, initial production 178 bbls. per hour through open tubing, total depth 3,543 feet. Rowan & Nichols' No. 2-B W. T. Todd, top sand 3,576 feet, initial production 43 bbls. in 15 minutes through one-half inch tubing choke, total depth 3,630 feet. Sakabo Oil Corp.'s No. 2 Hickman, top sand 3,611 feet, initial production 35 bbls. per hour through open tubing, total depth 3,616 feet. Shasta Oil Co.'s No. 1 Campbell, top sand 3,605 feet, initial production 75 bbls. per hour through three-fourths inch tubing choke, total depth 3,626 feet. S. D. Spratt's No. 1 W. E. Bumpass, top sand 3,594 feet, initial production 128 bbls. per hour through 1-inch tubing choke, total depth 3,631 feet. Stanolind Oil & Gas Co.'s No. 1 E. L. Walker, top sand 3,565 feet, initial production 140 bbls. per hour through 2½-inch tubing choke, total depth 3,588 feet. Stanolind and Simms Oil Co.'s No. 3 Fondville, top sand 3,524 feet, initial production 146 bbls. per hour through open tubing, total depth 3,570 feet. Stanolind, Simms and Continental Oil Co.'s No. 2 J. J. Flewellen, top sand 3,633 feet, initial production 150 bbls. in 30 minutes through 2-inch tubing choke, total depth 3,656 feet. Superior Oil Co.'s No. 3 Jones, top sand 3,585 feet, initial production 165 bbls. per hour through 1-inch tubing choke, total depth 3,660 feet.

Texas Oil & Royalty Co.'s No. 1 M. Fenn, top sand 3,570 feet, initial production 140 bbls. per hour pinched through tubing, total depth 3,604 feet. W. F. Turner's No. 4 Alfred Jones, top sand 3,599 feet, initial production 225 bbls. per hour through open tubing, total depth 3,648 feet. Vacuum Oil Co.'s No. 4 White, top sand 3,514 feet, initial production 251 bbls. per hour through open tubing, total depth 3,579 feet. Vacuum Oil Co.'s No. 3 Zeigler, top sand 3,433 feet, initial production 236 bbls. per hour through open tubing, total depth 3,512 feet. Virginia Oil Co.'s No. 1-A Harris, top sand 3,517 feet, initial production 100 bbls. per hour pinched through tubing, total depth 3,545 feet. Yount Lee Oil Co.'s No. 1 M. M. Guster, top sand 3,552 feet, initial production 31 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,570 feet. Same company's No. 4 Thad Hopkins, top sand 3,457 feet, initial production 94 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,477 feet. Same company's No. 2-A McKinley, top sand 3,546 feet, initial production 81 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,566 feet. Same company's No. 3-C McKinley, top sand 3,613 feet, initial production 84 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,633 feet. Same company's No. 2-A F. Smith, top sand 3,506 feet, initial production 92 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,526 feet.

Atlantic & Byrd-Frost's No. 3 M. R. Huey, top sand 3,546 feet, initial production 165 bbls. per hour through open tubing, total depth 3,589 feet. Empire Gas & Fuel Oil Co.'s No. 2 Lockhart, top sand 3,494 feet, initial production 173 bbls. per hour through open tubing, total depth 3,529 feet. Arkansas Fuel Oil Co.'s No. 1 Thornton, top sand 3,550 feet, initial production 63 bbls. per hour through three-quarters-inch tubing choke, total depth 3,570 feet. Gulf Production Co.'s No. 3 Mary Charles, top sand 3,643 feet, initial production 82 bbls. per hour through three-quatrers-inch tubing choke, total depth 3,649 feet.

Humble Oil & Refining Co.'s No. 1 Dora Thomas, top sand 3,551 feet, initial production flowed by heads, 18 bbls. in 40 minutes, total depth 3,671 feet. Same company's No. 2 Dora Thomas, location abandoned. Humphrey and others' No. 1 J. R. Bean, location abandoned. Hunter & Sietz's No. 1 Joe King, location abandoned. Kilgore-Central Oil Co.'s No. 1 Johnson-Haynie, location abandoned.

Magnolia Petroleum Co.'s No. 3 Sam Carr, top sand 3,425 feet, initial production 208 bbls. per hour through 1-inch tubing choke, total depth 3,443 feet. Same company's No. 4 Ben Laird, top sand 3,583 feet, initial production 64 bbls. first 5 minutes through 4-inch line and three-quarters-inch tubing choke, total depth 3,589 feet. J. D. Nantz's No. 1 S. L. Dansby, derrick abandoned.

Prairie Oil & Gas Co.'s No. 3 Walker, top sand 3,692 feet, initial production 54 bbls. per hour through three-quarters-inch tubing choke, total depth 3,697 feet. Same company's No. 4 Walker, top sand 3,699 feet, initial production 80 bbls. per hour through three-quarters-inch tubing choke, total depth 3,699 feet. Shell Petroleum Corp.'s No. 2 W. D. Lacy, top sand 3,640 feet, initial production 76 bbls. per hour through open tubing, total depth 3,643 feet.

E. L. Smith's No. 1 Register, top sand 3,637 feet, initial production 125 bbls. per hour through three-quarters-inch tubing choke, total depth 3,647 feet. Stanolind Oil & Gas Co.'s No. 5 Beall, top sand 3,663 feet, initial production 156 bbls. per hour, total depth 3,666 feet. Stanolind Oil & Gas Co. and Simms Oil Co.'s No. 2 A. W. Miller, temporarily abandoned. Stanolind Oil & Gas Co.'s No. 1 Nancy Redford, top sand 3,568 feet, initial production 147 bbls. per hour through 2½-inch tubing choke, total depth 3,589 feet. Sun Oil Co.'s No. 8 Beall, top sand 3,614 feet, initial production 110 bbls. in 30 minutes through open tubing, total depth 3,629 feet. Same company's No. 1 M. T. Cole, top sand 3,529 feet, initial production 187 bbls. per hour through open tubing, total depth 3,542 feet.

The Texas Company's No. 3 J. M. Dickson, top sand 3,554 feet, initial production 120 bbls. per hour through three-quarters-inch tubing choke, total depth 3,604 feet. Tidal Oil Co.'s No. 4 Barton, top sand 3,603 feet, initial production 55 bbls. in 10 minutes through open casing and tubing, total depth 3,616 feet. Vise and others' No. 1 O. A. Brown, top sand 3,651 feet, initial productoin 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,657 feet. Wise & Jackson's No. 1 Glover, temporarily abandoned.

Hunt County

M. S. Hammond's No. 1 W. H. Adams, location abandoned. M. S. Hammond's No. 1 R. L. Grey, location abandoned. T. H. Smith and others' No. 1 Whitney & Clark, rig moved and abandoned, total depth 350 feet.

Nacogdoches County

Hayter-Whited & Most's No. 1 George L. Mucklerog, dry and abandoned ,total depth 4,404 feet, top Austin Chalk 4,053 feet, base 4,318 feet, top Georgetown

Lime 4,358 feet, base Pecan Gay 3,636 feet.

Rusk County

Abercrombie & Harrison's No. 1 Cantrell, top sand 3,634 feet, initial production 110 bbls. per hour through one-half-inch tubing choke, total depth 3,647 feet. Devonian Oil Co.'s No. 10 R. A. Motley, top sand 3,766 feet, initial production 105 bbls. per hour through three-quarters-inch tubing choke, total depth 3,780 feet. Empire Gas & Fuel Oil Co.'s No. 3 Christian, top sand 3,753 feet, initial production 150 bbls. per hour pinched, total depth, 3,758 feet. Gulf Production Co.'s No. 2 Hamp Florence, top sand 3,753 feet, intial production 80 bbls. per hour through three-quarters-inch tubing choke, total depth 3,761 feet. George Guthries' No. G. P. Perry, temporarily abandoned.

Houston Oil Co.'s No. 4 Thompson, top sand 3,664 feet, initial production 120 bbls. per hour through 1-inch tubing choke, total depth 3,686 feet. Humble Oil & Refining Co.'s No. 1-B W. P. Moore, top sand 3,712 feet, initial production 45 bbls. per hour through 1-inch tubing choke, total depth 3,735 feet. Same company's No. 4-A H. Sexton, top sand 3,687 feet, initial production 123 bbls. per hour through three-quarters-inch tubing choke, total depth 3,712 feet. Roberts & Roscoe's No. 2 C. E. Christian, top sand 3,669 feet, initial production 60 bbls. per hour through 1-inch tubing choke, total depth 3,680 feet.

Snowden & McSweeney's No. 7 Laird, top sand 3,585 feet, initial production 115 bbls. per hour through three-quarters-inch tubing choke, total depth 3,772 feet. Stanolind Oil & Gas Co.'s No. 3 King, top sand 3,681 feet, initial production 151 bbls. in 56 minutes through open tubing, total depth 3,772 feet. Some company's No. 3 Powers, top sand 3,728 feet, initial production 185 bbls. per hour through open tubing, total depth 3,730 feet. The Texas Company's No. 1 Chappel, top sand 3,658 feet, initial production 45 bbls. per hour through open tubing, total depth 3,660 feet. Tidal Oil Co.'s No. 6 Nat Bean, top sand 3,570 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,630 feet.

Walton and others' No. 1 C. E. Christian, top sand 3,641 feet, initial production 25 bbls. in 10 minutes through open tubing, total depth 3,652 ft.

South Rusk County

Arkansas Fuel Oil Co.'s No. 3 Wheelis, top sand 3,655 feet, initial production 85 bbls. per hour through open tubing, total depth 2,675 feet. Aston's No. 1 Alford, top sand 3,663 feet, initial production 505 bbls. in 15 hours through tubing choke, total depth 3,732 feet. M. D. Bryant's No. 1 Thrash, top sand 3,749 feet, initial production 120 bbls. per hour through 2½-inch tubing choke, total depth 3,800 feet. E. L. Chapman's No. 1-B Finney, top sand 3,652 feet, initial production 125 bbls. in five hours through three-fourths inch tubing choke, total depth 3,698 feet. East Texas Refining Co.'s No. 2 John Bell, top sand 3,693 feet, initial production 145 bbls. per hour through open tubing, total depth 3,708 feet. Golding and Murchinson's No. 3 M. L. Thompson, top sand 3,683 feet, initial production 150 bbls. per hour through 2½-inch tubing choke, total depth 3,713 feet.

Haynes Drilling Co.'s No. 4 Clark Lee, top sand 3,793 feet, initial production 163 bbls. in 30 minutes through open tubing, total depth 3,667 feet. Humble Oil & Refining Co.'s No. 2 John Bell, top sand 3,793 feet, initial production 87 bbls. per hour through three-fourths inch tubing choke, total depth 3,612 feet. Same company's No. 6 Mulliken, top sand 3,670 feet, initial production 96 bbls. per hour through three-fourths inch tubing choke, total depth 3,737 feet. Same company's No. 2 Piercy, top sand 3,741 feet, initial production 108 bbls. per hour through three-fourths inch tubing choke, total depth 3,765 feet. Same company's No. 1 Sneed, top sand 3,698 feet, initial production 107 bbls. per hour through three-fourths inch tubing choke, total depth 3,739 feet. Same company's No. 2 J. Thompson, top sand 3,683 feet, initial production 92 bbls. per hour through three-fourths inch tubing choke, total depth 3,700 feet. Same company's No. 2 Wheelis, top sand 3,784 feet, initial production 72 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,615 feet. Same company's No. 2 Mattie Wooster, top sand 3,740 feet, initial production 89 bbls. per hour through three-fourths inch tubing choke. H. L. Hunt's No. 5-C R. W. Fair, top sand 3,614 feet, initial production 150 bbls. in 40 minutes through open tubing, total depth 3,634 feet.

Johnson and others' No. 1 G. W. Mullins, top sand 3,778 feet, initial production 66 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,800 feet. Lion Oil & Refining Co.'s No. 3-B Brooks, top sand 3,663 feet, initial production 85 bbls. per hour through open tubing, total depth 3,728 feet. Magnolia Petroleum Co.'s No. 3 Dan Kelley, top sand 3,600 feet, initial production 68 bbls. per hour through three-fourths inch tubing choke, total depth 3,616 feet. Mid-Kansas Oil & Gas Co.'s No. 2 Gora L. Graham, top sand 3,621 feet, initial production 165 bbls. per hour through open tubing, total depth 3,655 feet. Same company's No. 1 J. E. Mason, top sand 3,640 feet, initial production 175 bbls. per hour through open tubing, total depth 3,657 feet. Same company's No. 2 L. B. Rollins, location abandoned.

Sinclair Oil & Gas Co.'s No. 14 Kinney, top sand 3,614 feet, initial production 150 bbls. in 45 minutes through open tubing, total depth 3,624 feet. Same company's No. 15 Kinney, top sand 3,647 feet, initial production 145 bbls. in 40 minutes through open tubing, total depth 3,657 feet. Same company's No. 16 Kinney, top sand 3,651 feet, initial production 72 bbls. in 30 minutes through open tubing, total depth 3,663 feet. Same company's No. 7-B Mayfield, top sand 3,612 feet, initial production 37 bbls. in 50 minutes through open tubing, total depth 3,630 feet.

Southern Interstate's No. 2 Giles, top sand 3,690 feet, initial production 125 bbls. per hour pinched through tubing, total depth 3,714 feet. Standard Pipe & Supply Co.'s No. 2 John Bell, top sand 3,758 feet, initial production 132 bbls. in 30 minutes through open tubing, total depth 3,789 feet. The Texas Company's No. 2 J. W. Turner, top sand 3,738 feet, initial production 120 bbls. per hour through 1-inch tubing choke, total depth 3,792 feet.

Tyler County

L. H. Wentz' No. 1 J. P. Mann, dry and abandoned, total depth 2,208 feet.

Smith County

Arcadia Refining Co.'s No. 2 John Green, top sand 3,767 feet, initial production 27 bbls. in 15 minutes through five-eighths-inch tubing choke, total depth 3,777 feet. Gracey & Gronn's No. 1 M. Thompson, top sand 3,667 feet, initial production 165 bbls. per hour through open tubing, total depth 3,674 feet. Magnolia Petroleum Co.'s No. 1 Jim Wright, top sand 3,706 feet, initial production 175 bbls. in 15 minutes through open casing and tubing, total depth 3,720 feet. Same company's No. 11 J. R. Wright, top sand 3,700 feet, initial production 80 bbls. in 15 minutes through open casing and tubing, total depth 3,704 feet. Fugh & Hickman's No. 1 R. G. Wright, top sand 3,708 feet, initial production 125 bbls. per hour through one-half-inch tubing choke, total depth 3,716 feet. Nelson Pruitt's No. 1 M. L. Thompson, top sand 3,678 feet, initial production 100 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,681 feet.

Sinclair Oil & Gas Co.'s No. 6-A Mayfield, top sand 3,781 feet, initial production 150 bbls. in 40 minutes through open tubing, total depth 3,785 feet. Same company's No. 8-B Jarvis, top sand 3,720 feet, initial production 150 bbls. in 40 minutes through tubing, total depth 3,730 feet. Same company's No. 1 J. B. Wright, top sand 3,718 feet, initial production 80 bbls. in 30 minutes through open tubing, total depth 3,723 feet. Sun Oil Co.'s No. 5 O. W. Knight, top sand 3,663 feet, initial production 76 bbls. per hour through open tubing, total depth 3,674 feet. Same company's No. 1 S. S. Cooke, top sand 3,770 feet, initial pro-

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duction 150 bbls. per hour through open tubing, total depth 3,773 feet.

Upshur County

Atlantic Oil & Production Co.'s No. 2 Moyers, top sand 3,614 feet, initial production 180 bbls. per hour through tubing, total depth 3,638 feet. Cal-Pet Corp.'s No. 4 Deering, top sand 3,662 feet, initial production 115 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,711 feet. Gorsaline's No. 1 Purdue, location abandoned.

Humble Oil & Refining Co.'s No. 8 Edwards, top sand 3,630 feet, initial production 87 bbls. per hour through three-fourths-inch tubing choke, total depth 3,665 feet. Same company's No. 1 Phillips, top sand 3,644 feet, initial production 125 bbls. per hour through various chokes, total depth 3,657 feet. Same company's No. 2 Jessie Phillips, top sand 3,658 feet, initial production 49 bbls. per hour through three-fourths-inch tubing choke, total depth 3,688 feet. Magnolia Petroleum Co.'s No. 13 J. W. Free, top sand 3,701 feet, initial production 156 bbls. per hour through 1-inch tubing choke, total depth 3,711 feet.

Showers & Moncrief's No. 1 Collins, top sand 3,705 feet, initial production 125 bbls. per hour pinched through tubing, total depth 3,712 feet. Shell Petroleum Corp.'s No. 1 W. M. Landers, top sand 3,692 feet, initial production 125 bbls. per hour pinched through tubing, total depth 3,704 feet. Stanolind-Weaver's No. 2 B. F. Phillips, location abandoned. Tytex Oil & Development Co.'s No. 1 S. Kay, top sand 3,705 feet, initial production, flows by heads, total depth 3,712 feet.

Wood County

Brennan & Wood's No. 1 L. W. Mings, location abandoned.

Van Zandt County

Pure Oil Co.'s No. 7 R. A. Tunnell, initial production 583 bbls. through eleven-sixteenths-inch tubing choke, total depth 2,955 feet. Same company's No. 4 J. A. Bracken, initial production 414 bbls., total depth 2,947 feet. Same company's No. 13 R. L. Wells, initial production 475 bbls. through eleven-sixteenths-inch tubing choke, total depth 2,938 feet. The Texas Company's No. 2 J. W. Bracken, initial production 755 bbls. through eleven-sixteenths-inch tubing choke, total depth 2,933 feet.

NORTH AND WEST TEXAS

(Continued from Page 26)

520 acres of leases and seven gas producing wells in southern Wheeler County from Wischkamper and associates for $50,000, adding to the Lone Star's gas properties and obtaining an added gas supply for its lines leading from this area.

The Shamrock Oil & Gas Co. is experimenting with gas lift and its No. 1 Bromley in Moore County and has increased production in the well from 60 to 105 bbls. per hour when gas was injected at 210 pounds pressure. Total depth of the well is 3,545 feet. It is 6 miles southwest of the Sunray Pool.

Average production for each well in Carson County is 24.4 bbls., 57.2 bbls. for Gray County wells, 14.9 bbls. for Hutchinson County wells, most of which are in the Borger Field, 64.5 bbls. for Moore County wells and 10.4 bbls. for Wheeler County wells.

Production fell from 67,481 bbls. per day last week to 60,488 bbls. this week, a decrease of 6,993 bbls. per day, due to the change in gauging and producing the wells and curtailing to new allowable, which is 55,000 bbls. per day. The field force of the Railroad Commission is now making determination of potentials of the wells for future proration work.

There were two new locations in the district this week, both of them being in Gray County.

NORTH TEXAS

There were nine locations staked in Archer County this week, seven in Young County, three in Wichita and one in Wilbarger. Seven tests were completed in Archer, seven in Young and two in Wichita County.

Deep Oil Development Co. and others' No. 1 Wilson in Section 119, A.T.N.C. Survey, in the Chalk Hill district, Archer County, was completed this week for an initial production of 520 bbls. through three-fourths-inch choke, producing from deep sand logged at 2,196-2,212 feet, with rock pressure 625 pounds. Gravity of the oil is 42.8 degrees. This is the third deep well to produce from the deep new pay in top of the Canyon group. All wells are of about the same size, giving proof that the deep pay will be regular in this area. The Texas Pipe Line Co. has connected with the well, taking 45 per cent of its potential, according to the proration schedule in this district.

WEST TEXAS PRODUCTION
Week Ending November 14

County—	No. wells	Prod.
Crane	377	17,368
Crockett	51	1,084
Ector	78	6,419
Fisher	78	912
Garza	2	0
Howard-Glasscock	544	27,016
Irion	9	60
Jones	87	1,384
Loving	46	3,745
Mitchell	111	1,735
Pecos	551	66,978
Reagan	355	30,570
Runnels	5	59
Scurry	5	0
Upton	263	4,493
Taylor	3	60
Ward	74	3,831
Winkler	595	36,463
Total production this week		202,178
Total production last week		195,257
Increase		6,921

SHIPMENTS THROUGH TRUNK LINES

Company, size and destination—	Bbls.
Atlantic P. L. Co., 10-inch, Houston	21,667
Gulf P. L. Co., 10-inch, Ranger	23,987
Humble P. L. Co., 2 and 8-inch, San Angelo	10,689
Humble P. L. Co., 10 and 12-inch, Ingleside	49,937
Illinois P. L. Co., 2 and 8-inch, Del Rio	23,916
Magnolia P. L. Co., 8-inch, De Leon	6,292
Paso-Tex P. L. Co., 8-inch, El Paso	8,270
Shell P. L. Co., 10-inch, Cushing, Okla.	37,375
Shell P. L. Co., 10-inch, Houston	10,814
Texas P. L. Co., 12-inch, Houston	15,260
Total	208,207

SHIPMENTS TO REFINERIES

Burford Ref. Co., Pecos	2,982
Cosden Ref. Co., Big Spring	5,743
Col-Tex Ref. Co., Colorado	8,002
Greatwestern Ref. Co., Big Spring	1,538
Wickett Ref. Co., Wickett	620
Continental Ref. Co., Pyote	1,150
Signal Ref. Co., Texon	500
Howard County Ref. Co., Big Spring	670
Total	21,205

SHIPMENTS BY TANK CAR

Fox & Thorsen, Mertzon	70
Total average distribution	229,482

GERMAN IMPORTS GAIN

NEW YORK, Nov. 16.—Russian petroleum is making substantial inroads in the German market, replacing American petroleum products there, according to a radiogram from Berlin to the "New York Times," which says:

"The Russian 'oil invasion' of Germany is increasing. Import of Russian benzine during the first eight months of 1931 was 176,000 tons, as against 133,280 tons in the same months of 1930, whereas import from America during the period was 411,000, against 557,000 tons.

"Import of Russian lubricating oils in the same months was 60,452 tons, against 54,000 tons last year, whereas imports from America were 108,000 against 178,000."

PIONEER OIL MAN DIES

Robert Galey, 88, widely known pioneer oil and gas operator of Beaver, Pa., died on October 24 at his winter home in Orlando, Fla.

He was among the earliest oil and gas operators in Pennsylvania and had engaged in that business for many years prior to his retirement from active life.

He was born near Parker, Pa., March 30, 1843, the son of Robert and Rachel Spahr Galey, who came to the United States from northern Ireland in 1819. Shortly after Colonel Drake drilled the first oil well in 1859, Mr. Galey became active in the production of petroleum. He was a brother of John H. Galey, who first developed the Mid-Continent oil field at Neodesha, Kans., in 1893, and who died in 1917.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 25)

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. ..... To resume drilling.

ECTOR COUNTY

Weekly Oil Corp. et al's No. 1 Cowden, 1,980 ft. from N and W Sec. 33, Blk. 43, Twp. 2s, T.&P. Sur. ..... Drlg. 1,480 ft.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M. M.Br.&A. Sur. ..... S.D. 3,280 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 254, S.F. No. 7,247 ..... Total depth 1,725 ft.

FISHER COUNTY

The Texas Company's No. 1 Daniels, 357 ft. from S and 330 ft. from W lines of Sec. 194, Blk. 1, B.B.&C. Sur. ..... Shut in 3,105 ft.; made 90 bbls. on 1-hour test.

Cranfill & Reynolds' No. 1 George, 400 ft. from N and 330 ft. from E. Sec. 200, Blk. 1, B.B.&C. Sur. ..... Drlg. 3,480 ft.

Cranfill & Reynolds' No. 1 Snipe, 330 ft. from N and W lines of Sec. 195, Blk. 1, B.B.&C. Sur. ..... Drlg. 700 ft.

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,312 ft. from NE, Sec. 4, Blk. A-8, P.S.L. Sur. ..... T.D. 4,700 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ..... Spudded and S.D.

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Drlg. 3,400 ft.

HOWARD COUNTY

Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. .. Spudded and S.D.

Merrick & Lamb's No. 2 Chalk, 990 ft. from the N and W lines of Sec. 125, Blk. 29, W.&M.W.R.R. Sur. .... Drlg. 3,175 ft.

L. C. Harrison et al's No. 1 L. C. Denman, 2,310 ft. from S line and 330 ft. from E line of Sec. 10, T.&P.R.R. Sur., Blk. 30 ..... Location.

IRION COUNTY

Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W Sec. 3,681, Blk. 28, H.&T.C. Sur. ..... Drlg. 5,225 ft.

Denny & Andrews' No. 1-A Tankersley, 200 ft. from S and 2,000 ft. from E of Sec. 709, J. P. Imhoff Sur. .. S.D. 463 ft.

Ellis Flanery Corp.'s No. 1 Nutt, 1,350 ft. from N and 450 ft. from E of Sec. 694, Kheikenholm Sur. ..... Fishing for tools 2,680 ft.

Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... Fishing for tools 6,730 ft.

Straughn & Adkins Bros.' No. 1 Lee, 1,080 ft. from W and 420 ft. from N of Sec. 729, C. Kaiser Sur. ..... Shut down 975 ft.

JONES COUNTY

Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 43.4-acre tract in G. Martinez Sur. ..... S.D. 1,005 ft.; temporarily abandoned.

Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur. .... Location.

LOVING COUNTY

Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 53, T.&P. Sur. ..... S.D. 810 ft.

Slack's No. 1 Lynd, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Drlg. 3,425 ft.

Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 33, H.&T.C. Sur. ..... S.D. 2,500 ft.

Lewis & Slagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W Sec. 6, Blk. 56, Twp. 1, T.&P. Sur. .. Rigging up national machine

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... S.D. 3,385 ft.

Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,675 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ..... S.D. 2,860 ft.

PECOS COUNTY

Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 10, H.&G.N. Sur. ..... T.D. 1,300 ft.

Slaughter et al's No. 1 Sun Yates, 60 ft. S of Sun Oil Co.'s No. 1 Yates, Sec. 59, Blk. 1, I.&G.N. Sur. ..... Material.

REAGAN COUNTY

Carl Cromwell et al's No. 1 University, 1,320 ft. from S line and 1,320 ft. from E line of Sec. 4, University Blk. 7 ..... Spudded 55 ft.

Big Lake Oil Co.'s No. 6-C University, 1,370 ft. from S and 1,000 ft. from E Sec. 12, Blk. 2 ..... Drlg. 3,950 ft.

REEVES COUNTY

Cunningham et al's No. 1 Wright, 1,320 ft. from S and W Sec. 58, Cassel's Sur. ..... Spudded and S.D.

F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur. .... Drlg. 125 ft.

James & Milton's No. 1 Patterson, 330 ft. from N and W of Sec. 21, Blk. 73 ..... Testing wtr. shutoff 3,330 ft.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .. S.D. 5,044 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... S.D. 2,700 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... S.D. 4,500 ft; contract depth.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... S.D. 5,060 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 P. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... S.D. 5,100 ft.

Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and S.D.

Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Drlg. 3,610 ft.

Simon & Brock et al's No. 1 Cruse, 2,310 ft. from S and E Sec. 119, Blk. 97, H.&T.C. Sur. ..... S.O. 1,798, 1,820, 1,850 ft; S.D. 2,500 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M-K-T Sur. ..... S.D. 2,669 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Trying to drill by tools 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... S.D. 120 ft.

Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F. Sur. S.D. 6,120 ft.

Jones et al's No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... S.D. 2,545 ft.

Sides et al's No. 1 Phelps, 2,167 ft. from N and 2,482 ft. from W Sec. 5, G. W. Turley Sur. ..... Shut down.

TOM GREEN COUNTY

Andrews' No. 1 Pugh, 250 ft. from N and 5,184 ft. from E, James Eldridge Sur. No. 73 ..... Spudded.

Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... S.D. 760 ft; S.O. and gas 725 ft.

Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. .... S.D. 1,994 ft.

Pratt & Hancock's No. 3 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... S.D. 200 ft.

UPTON COUNTY

Farley et al's No. 1 Lane, 2,310 ft. from S and 990 ft. from W Sec. 36, Blk. 1, M.-K.-T. Sur. ..... Drlg. 2,355 ft.; top pay 2,310 ft.; 1,300 ft. oil in hole; to test.

T. P. Coal & Oil Co.'s No. 2 Shirk, 1,650 ft. from S and 330 ft. from E of Sec. 1, Blk. 3, M.-K.-T. Sur. ..... Drlg. 1,730 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... S.D. 5,360 ft.

O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... S.D. 6,780 ft.

WARD COUNTY

Abell Bros.' No. 1 Sloan, 330 ft. from NW and NE Sec. 24, Blk. 5, H.&T.C. Sur. ..... Spudded.

Atlantic O. & P. Co.'s No. 1 Archenhold, 2,310 ft. from NE line and 330 ft. from NW line of Sec. 23, H.&T.C. Sur., Blk. 5 ..... Fishing for bailer 815 ft.

Boogher's No. 1 fee, 235 ft. from SE and 3,553 ft. from NE Sec. 11, Blk. 5, H.&T.C. Sur. ..... S.D. 2,111 ft.; skidded machine 20 ft. south.

Bradford-Bentley's No. 1 Beatty, 330 ft. from SW and NW of Sec. 3, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,100 ft.; top salt 1,030 ft.

Eppenauer's No. 1 Purcell, 365 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 34, H.&T.C. Sur. ..... Spudded.

H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW Sec. 12, Blk. 5, H.&T.C. Sur. ..... Spudded and S.D.

Gulf Production Co.'s No. 17-B Hutchings, 330 ft. from N and 1,650 ft. from W of S 370 acres of Sec. 5, Blk. F, G.M.M.B.&A. Sur. ..... Location.

Hankinson et al's No. 1 Emery, 3,090 ft. from SE and 510 ft. from SW Sec. 26, Blk. 5, H.&T.C. Sur. ..... S.D. 2,238 ft.

Moran & Miles' No. 1 Boogher, 3,603 ft. from NE and 1,303 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ..... S.D. 715 ft.

Massie-Sturm's No. 1 Green, 330 ft. from NW and SW Sec. 4, Blk. 34, H.&T.C. Sur. ..... Location.

R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,533 ft. from SW Sec. 1, J. Howe Sur. ..... Drlg. 290 ft.

Prairie Oil & Gas Co.'s No. 1 Edmonson, 330 ft. from NW and 2,310 ft. from SW of Sec. 23, Blk. 5, H.& T.C. Sur. ..... 500,000 ft. of gas 2,083-2,106 ft.; drlg. 2,455 ft.

Prairie Oil & Gas Co.'s No. 2 Edmonson, 330 ft. from NW and SW of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Location.

Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E, Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... S.D. 3,602 ft.

Paul Ryan et al's No. 1 J. S. Reynolds, 4,110 ft. from NE line and 150 ft. from NW line, Sec. 12, Blk. 5, H.&T.C. Sur. ..... S.D. 2,040 ft.

Sudderth & Carey's No. 1 J. H. Boogher et al, 150 ft. from SW and SE lines of Lot 24, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Spudded and shut down.

Stanolind Oil & Gas Co.'s No. 1 Brown, 330 ft. from NW and SW Sec. 26, Blk. B-29 ..... 5,000,000 ft. gas 2,233-35 ft.; shut down 2,285 ft.

Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Total depth 4,665 ft.; top Delaware lime 4,630 ft.; top sand 4,663 ft.; 1,800 ft. oil in hole.

White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... S.D. 755 ft.

WINKLER COUNTY

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-5 ..... S.D. 4,640 ft.

Richardson's No. 1 Sealy, 330 ft. from S and W of Sec. 92, Blk. A, G.M.M.B.&A. Sur. ..... Rig up.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 26)

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... S.D. 2,650 ft.

Dixon Creek Oil Co.'s No. 2 Horner, 330 ft. from N and E of Sec. 139, Blk. 3, I.&G.N. Sur. ..... Rigging up rotary.

Parton Holt and Shell Pet. Corp.'s No. 1 Morse, 330 ft. S and E, Sec. 6, Blk. 26, H.&G.N. Sur. ..... Drlg. 2,265 ft; top gas 2,075 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... Fishing 3,010 ft.

Graham et al's No. 1 Webb, 330 ft. from N and E of E half NE, Sec. 62, Blk. 25, H.&G.N. Sur. ..... Standardizing.

Jewel Oil Co.'s No. 1 Meers, 330 ft. from S and W of NW SW, Sec. 106, Blk. 3, I.&G.N. Sur. ..... Drlg. 250 ft.

Magnolia Pet. Co.'s No. 1 Arnold, 330 ft. from S and E, Sec. 149, Blk. 3, I.&G.N. Sur. ..... Cellar.

Magnolia Pet. Co.'s No. 1 Heaston, NE cor. S½ NE, Sec. 164, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,600 ft.

Mid-Kansas Oil & Gas Co.'s No. 1 Carpenter, 330 ft. from S and 990 ft. from W, Sec. 37, Blk. 25, H.&G.N. Rig on ground.

Nelson et al's No. 1 Crewa, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... S.D. 2,619 ft.

Nipper et al's No. 1 Morse, 330 ft. from N and E, Sec. 1, Blk. 26, I.&G.N. Sur. ..... Drlg. 2,280 ft.

Prairie Oil & Gas Co.'s No. 1 Morse, 330 ft. from N and E of Sec. 4, Blk. 26, H.&G.N. Sur. ..... Standardizing.

Pulse-Shell Pet. Corp.'s No. 1 Wright, 330 ft. from S and W of Sec. 13, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,643 ft.

Skelly Oil Co.'s No. 2 Heaston, 330 ft. from S and E N half NE, Sec. 164, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,555 ft.

Saunders et al's No. 2 Sullivan, 822 ft. from W and 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Will plug back to 3,275 ft. and shoot.

Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9 H.&G.N. Sur. ..... Rig up and S.D.

Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.B.&S.F. Sur. ..... Location.

Quicksand Oil Co.'s No. 1 Chapman, 250 ft. from N and E, Sec. 69, Blk. 25, H.&G.N. Sur. ..... Drlg. 725 ft.

Vulcan Corp.'s No. 1 Carpenter, 330 ft. from S and E, Sec. 25, Blk. 25, H.&G.N. Sur. ..... S.D. for csg. 1,500 ft.

HUTCHINSON COUNTY

Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. ..... Spudded and S.D.

Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. ..... S.D. 450 ft.

Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... S.D. 3,016 ft.

Smith & McDaniel et al's No. 4 Pitcher, 990 ft. from S and 330 ft. from W, Sec. 19, Blk. M-21. Sur. ..... Drlg. 1,275 ft.

Smith & Daniels' No. 3 Pitcher, 990 ft. from S and 330 ft. from E, Sec. 19, Blk. M-21, T.C.R.R. Sur. ..... T.D. 3,152 ft; pay 3,070 ft; swabbed 80 bbls. in 4 hrs; S.D. 3,115 ft.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... Top pay 3,070-95 ft; 500 ft. oil in hole.

Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. ..... Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

MOORE COUNTY

Gulf Prod. Co.'s No. 1 Burnett, 330 ft. from N and W, Sec. 356, Blk. 44, H.&T.C. Sur. ..... Standardizing 2,748 ft.

Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ..... Rig up.

Magnolia Pet. Co.'s No. 1 Nelld, 330 ft. from S and E of N½, Sec. 361, Blk. 44, H.&T.C. Sur. ..... Location.

Pollard et al's No. 1 Hall, 330 ft. S and E, NE, Sec. 131, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

Texas Interstate P. L. Co.'s No. 1-23 Thompson, C N½ NE, Sec. 23, Blk. 44, H.&T.C. Sur. ..... Location.

Texas Interstate P. L. Co.'s No. 1-37 Sneed, C NW, Sec. 37, Blk. 6-T, T.&N.O. Sur. ..... Location.

Texas Interstate P. L. Co.'s No. 1 Coon, 2,025 ft. from N and 2,640 ft. from W, Sec. 149, Blk. 44, H.&T.C. Sur. ..... Drlg. 2,910 ft; top gas 2,775 ft.

Texhoma Natural Gas Co.'s No. 2 Coon, center of Sec., Sec. 151, Blk. 44, Sur. ..... Set 12-in. at 467 ft.

Texhoma Nat. Gas Co.'s No. 1 Coon-Sneed, center Sec. 8, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 2,885 ft; top gas 2,585 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.

Chambers et al's No. 1 Herring, CNL, Sec. 26, Blk. S, G.C.&S.F. Sur. ..... S.D. 2,945 ft.

PARMER COUNTY

Magnolia Pet. Co.'s No. 1 Wilson, 330 ft. from N and W of SE, Sec. 73, H. Kelly Sur. ..... Spudding.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. ..... Drlg. 2,475 ft.

Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. ..... S.D. 2,690 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, 330 ft. S and W, SE, Sec. 2, Blk. A-9, H.&G.N. Sur. ..... S.D. for 6-in. csg. 2,150 ft.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 26)

Atlantic Oil & Prod. Co.'s No. 1 Turner estate, 893 ft. from N line and 1,857 ft. from E line of lease and survey, W. C. Wakeland Sur. ..... Rigging up.

Artic Petroleum Co.'s No. 1 King, 57 ft. S of most northerly NW cor. and 104 ft. E at right angles in 2-in. tract, Chisum Sur. ..... Waiting on cmt. to set 3,630 ft.

Bond et al's No. 1 J. R. Fenton, 360 ft. from S line and 252 ft. from E line of 20-ac. of west 30 acres, D. Sanches Sur. ..... Drlg. 2,570 ft.

Barnett and Foshee's No. 1 Foshee estate, center Blk. 15, SE offset to Finlayson and Beck's No. 1 Sturvinant, H. R. Holit Sur. ..... Waiting on cement to set.

Brannon et al's No. 1 W. A. Horton, center of 2-ac. lease, John Ruddle Sur. ..... Skidded rig 25 ft. north.

Buchanan et al's No. 1 George Ritchie, 120 ft. N and 15 ft. W of Monzeil and Currie's No. 1 Church Block No. 4, M. Dillard Sur. ..... Derrick.

Bramlette's No. 1 Goforth, 170 ft. due N of NW cor. of Sun-Hilburn-Lloyd lease in Chisum Sur. ..... Rig up and S.D.

Bob et al's No. 1 T. L. Broy, 290 ft. from E and 1,640 ft. from S of H. A. Holdt Sur. ..... Derrick.

M. T. Beeler's No. 1 Finley and Thomas, 150 ft. from N and 150 ft. from W of 10-ac. lease, C. H. Alexander Sur. ..... Derrick.

Branson et al's No. 1 J. J. Fuller, 1,050 ft. from N and 170 ft. from W of survey, M. Alexander Sur. ..... Derrick.

Columbia Oil & Gas Co.'s No. 1-A Harley, 650 ft. E and 300 ft. S of SE cor. of Laura Walker 45-ac. tract, William Robinson Sur. ..... Derrick.

C. R. Starnes' No. 1 G. C. Dunaway, center of Blk. 5, 115 ft. S, 475 ft. W SE cor. H. R. Holit Sur. ..... Derrick.

D. L. Hoffman's No. 1 Bumpass, 360 ft. from S line and 260 ft. from W line of 10-ac. lease, W. H. Castleberry Sur. ..... Derrick.

E. E. Fogleson's No. 1 J. B. Doley, 150 ft. from S line and 460 ft. from W line of tract, W. M. Castleberry Sur. ..... Set 10-in. csg. 67 ft.

Empire Gas & Fuel Co.'s No. 1 J. C. Bumpass, 330 ft. S along road from NW cor. and 330 ft. E of W line of lease, W. H. Castleberry Sur. ..... Location.

Everett et al's No. 1 Barton, center Blk. 6, Mary Van Winkle Sur. ..... Location.

F. H. E. Oil Co.'s No. 1 R. Christian, 990 ft. from S line, 330 ft. from E line of 60-ac. tract, G. W. Hooper Sur. ..... Location.

Harris et al's No. 1 J. E. Demoss, center of 1.5-ac. tract, H. R. Holit Sur. ..... Rigging up.

Humble Oil & Refining Co.'s No. 1 H. M. Lawrence, 540 ft. from N and 219 ft. from W of 100-ac. tract, David Ferguson Sur. ..... Derrick.

J. O. Hodges et al's No. 1 G. W. Ritchie, center of S 5 acres of N 10 acres of E 20 acres of Ritchie 40-ac. tract, Wm. Carlton Sur. ..... Set 10-in. csg. 80 ft.

K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur. ..... S.D. 700 ft.

M. E. Gaskitt's No. 1 J. A. Godfrey, 220 ft. from S line, 150 ft. from W line of 4.25-ac. lease, M. Dillard Sur. ..... Waiting on cement to set.

Magnolia Pet. Co.'s No. 1 A. Hicks, 330 ft. from S line, 760 ft. from E line SE cor. of 98-ac. lease, D. Drainwood Sur. ..... Rigging up.

Morgan and McMinn's No. 1 H. L. Foster, 150 ft. W, 15 ft. N SW cor. Magnolia Foster lease, Wm. Painter Sur. ..... Rigging up.

Prairie Oil & Gas Co.'s No. 1 Thomas, 330 ft. from N line and 375 ft. from E line of lease, J. M. Norris Sur. ..... Top sand 3,746 ft.; run tubing; T.D. 3,751 ft.

Prairie Oil & Gas Co.'s No. 1 W. H. York, 620 ft. from W line and 1,900 ft. from S line of survey, M. Dillard Sur. ..... Top sand 3,569 ft.; testing.

Ross et al's No. 1, located on Findley & Thomas 50-ac. tract, 150 ft. from S line of 6.66-ac. lease, C. H. Alexander Sur. ..... Derrick.

Simplex Oil Co.'s No. 1 J. E. Lawther, 330 ft. from S line and 330 ft. from W line of 36.5-ac. lease, John Moffitt Sur. ..... Top sand 3,553 ft.; T.D. 3,589 ft.

Stanolind Oil & Gas Co.'s No. 1 Nancy Redford, 478 ft. from S line and 462 ft. from W line of 19-ac. tract, John Blair Sur. ..... Waiting on cmt. to set.

Stanolind Oil & Gas Co.'s No. 1 Beulah Jones, 330 ft. S line and 378 ft. from E line of 100-ac. tract, G. W. Hooper Sur. ..... Coring 3,580 ft.

Shell Pet. Corp.'s No. 1 A. A. King, 245 ft. from N line, 550 ft. from E line of lease, Geo. A. Thompson Sur. ..... Drlg. 2,915 ft.

Sun Oil Co.'s No. 1 Calvin Brown, 330 ft. from most southerly S line and middle of E and W lines of lease, L. B. Outlaw Sur. ..... Derrick.

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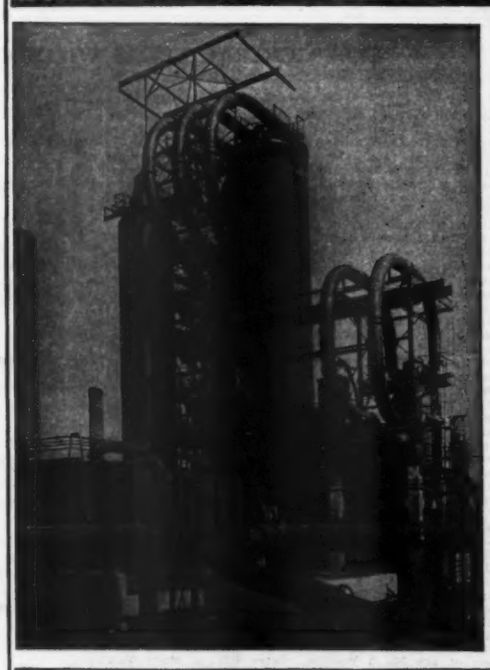

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GULF REFINING COMPANY

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Shano Oil Co.'s No. 1 S. G. Smith, 162 ft. from N and S lines, 320 ft. from W line of 17-ac. lease, W. H. Castleberry Sur. ..... Derrick.
Sun Oil Co.'s No. 1 J. E. Rollins, 1,492 ft. from N line, 1,492 ft. from S line, 589 ft. from W and E lines of 85-ac. lease, M. Scott Sur. ..... Location.
Tom C. Patten's No. 1 George Walter, center of 1-ac. tract and 396 ft. from W line of lease, Mary Van Winkle Sur. ..... Location.
Tidal Oil Co.'s No. 1 Lake Divernia Fish and Game Club, 300 ft. from N and 550 ft. from W lines of tract in William G. Painter Sur. ..... Drlg. 100 ft.
Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ..... Rigging up.

HENDERSON COUNTY

J. M. Rogers' No. 1 M. N. Gussett, 150 ft. from N line, 1,000 ft. from W line of 103.5-ac. tract, L. D. Stover Sur. ..... Spudded and shut down.
Seven Wells Corp.'s No. 1 Douglas, 787 ft. from N and 833 ft. from E of tract in K. H. Douglas Sur. ..... Cored dry, Woodbine sand 3,998-4,002 ft.; base of Austin chalk 3,542 ft.

HOPKINS COUNTY

Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract in the John Polk Sur. ..... S.D. 540 ft.

HOUSTON COUNTY

Apex Drlg. Co.'s No. 1 Thompson Bros., 250 ft. out of NW cor. of 200-ac. tract in John Shears Sur. ..... Waiting on casing.
Ramsland and Ramsland's No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramond LaGarza Sur. ..... Drlg. 1,680 ft.
C. T. McMamus' No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tract, J. P. Procella Sur. ..... Spudded and S.D. 37 ft.

HUNT COUNTY

Branson et al's No. 1 Gray ..... Location.
Russell et al's No. 1 Brooks and Quattlebaum ..... S.D. 1,455 ft.

LAMAR COUNTY

Indian States Oil Co.'s No. 1 W. T. Watson in Ignalius Aud Sur. ..... S.D. 4,026 ft.
Puritan's No. 1 George Parr, 2,000 ft. from W of Frisco Railway and 1,000 ft. from E line of R. Russell Sur. ..... Rigging up.

LEON COUNTY

Cooper et al's No. 1 Lynch, 4,000 ft. from W line and 250 ft. N from the S line of Thomas H. Gardner Sur., and in 200-ac. tract ..... S.D. 1,931 ft.
Sun Oil Co.'s No. 2 Grayson ..... Drlg. 5,258 ft.

MORRIS COUNTY

Dumas et al's No. 1 Tom Ball, 1,046 ft. from E and 248 ft. from S of 71-ac. tract, A. S. Young heirs Sur. ..... Derrick.

NACOGDOCHES COUNTY

Bunte et al's No. 1 A. F. Boatman, 330 ft. from S and 150 ft. from W of 67-ac. tract, William A. Moore Sur. ..... S.D. 1,605 ft.
Churchill-Armstrong's No. 1 Max W. Hart, 2,640 ft. from N line and 2,640 ft. from S of N line of survey, George Pollett Sur. ..... Derrick.
G. A. Teague's No. 1 Norris, 60 ft. NW of E line and 420 ft. S of road in 73.5-ac. tract, Hosea Y. Barbo Sur. ..... Derrick.
Gainer et al's No. 1 Nice Well, 18 miles SE of Nacogdoches, 600 ft. from S and 150 ft. from W of Wells tract in A. Cherino Sur. ..... Shut down 3,430 ft.
Joiner and Henson's No. 1 Andy Legg, 330 ft. from N and 330 ft. from W of tract, John Durst Sur. ..... S.D. 3,920 ft.
Scully & Harwell's No. 1 R. I. Driver, 1,500 ft. from SE cor. of P. B. Ballard 125-ac. tract, 15 miles SE of Nacogdoches in Patricia De Torres Sur. ..... S.D. 3,035 ft.
Taylor-Vaughn's No. 1 Dixon Greer, 160 ft. from W and 450 ft. from N lines of 60-ac. tract in the M. G. Herrera Sur. ..... Shut down 265 ft.
Creighton Drlg. Co.'s No. 1 J. N. Stewart, center of 79-ac. tract in the Jose Ignacio Ybarbo Sur. ..... S.D. 2,335 ft.

RAINS COUNTY

Berry and Hale's No. 1 Ownsby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ..... Coring 3,160 ft.

RED RIVER COUNTY

Doyle and Jondreau's No. 1 V. S. Griffin, 700 ft. from N line and 650 ft. E of W line of survey, J. C. Brown Sur. ..... Slush pit.
Droppleman and Bundy's No. 1 J. W. Cunningham, 250 ft. from the S and 1,066 ft. from the E lines of B. M. Ballard Sur. ..... Rig up.
Harris & Joiner's No. 1 E. Howison, 225 ft. S. 135 ft. W of 79-ac. tract, William Humphreys Sur. ..... Shut down 1,940 ft.
Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ..... Drlg. 1,468 ft.

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tract in W. M. Bird Sur. ..... Set 10-in. csg. 130 ft.

RUSK COUNTY

Barney Cockburn's No. 1 Nathan Green, 330 ft. from S and E line of lease, M. Husner Sur. ..... Drlg. 3,400 ft.
Chapman's No. 1 W. M. Futch, 330 ft. from N line and 500 ft. from E line of survey and lease, Jos English Sur. ..... Waiting on boilers.
F. C. Clark's No. 1 A. Johnson, center of 3-ac. lease, E. A. J. Evans Sur. ..... Location.
Griffith Bros.' No. 1 S. E. Brox, 330 ft. from N and W lines of 30-ac. tract, Thomas Grace Sur. ..... Drlg. 2,775 ft.
Humble Oil & Ref. Co.'s No. 1 Ben Peterson, 453 ft. from N line, 330 ft. from W line of N line and 330 ft. from W line of 50-ac. lease, J. Lewis Sur. ..... Moving in rig.
Humble Oil & Ref. Co.'s No. 1 C. W. Wilson, 963 ft. from N line of Joe Williams tract, 400 ft. S. 156 ft. E of NW cor. of V. E. Reed tract, T. J. Martin Sur. ..... Derrick.
H. L. Hunt's No. 1 V. E. Reed, 330 ft. from N and W lines of 135-ac. tract, T. J. Martin Sur. ..... Drlg. 63 ft.
Noel Rushing et al's No. 1 Geo. Thompson, 700 ft. from N line and 600 ft. from W line of lease and survey. Drlg. 100 ft.
Risinger et al's No. 1 L. Barton, 40 ft. S. 330 ft. W of Able and Avery's No. 1 Florey, W. G. Tutt Sur. ..... Rig up.
Weaver and Crim's No. 1 Bean, 330 ft. from S line and midway between E and W lines of lease, H. Hobson Sur. ..... Derrick.
Tex-Jersey Oil Corp.'s No. 1 G. W. Eaton, center of 1.54-ac. tract, F. Cordova Sur. ..... Drlg. 3,010 ft.
Carl G. Willie's No. 1 Joe Lee, old well being drilled deeper, 330 ft. from S and E line of 50-ac. tract, Geo. Berry Sur. ..... Drlg. 3,805 ft.

KILGORE AREA—RUSK COUNTY

Harry Elliott's No. 1 Carroll, 175 ft. from N and 200 ft. from E of 7-ac. tract, W. R. Cooke Sur. ..... Location.
Raitman's No. 1 W. P. Moore, 240 ft. from S and 330 ft. W of NW cor. of W. P. Moore 25-ac. lease, H. Wiggins Sur. ..... Top sand 3,717 ft.; T.D. 3,719 ft.

JOINER POOL—RUSK COUNTY

Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ..... Derrick.
C. M. Johnson's No. 1 Griffin, 539 ft. from N line and 115 ft. from W line of lease, J. B. Cadena Sur. ..... Waiting on cement to set.
Duncan and Holt's No. 1 R. A. Motley, 150 ft. from N line, 2,700 ft. from W line of Motley 100-ac. tract, F. Cordova Sur. ..... Waiting on cement to set.
Humble Oil & Refining Co.'s No. 1 Moranda Joyner, 330 ft. from N and W lines of lease, F. Cordova Sur. ..... Drlg. 2,944 ft.
Humble Oil & Ref. Co.'s No. 1 Jessie White, 330 ft. from S line, 330 ft. from W line of 42-ac. tract, James Scott Sur. ..... Drlg. 3,116 ft.
Jackson et al's No. 1 P. C. Warrne, 390 ft. from N line, 253 ft. from E line of 45-ac. tract, J. Womack Sur. ..... Derrick.
M. & G. Oil Co.'s No. 1 Lewis Deguerin, 1,050 ft. from E line, 3,075 ft. from S line of survey, M. J. Pru Sur. ..... Drlg. 2,760 ft.
Magnolia Pet. Co.'s No. 1 S. E. Brox, 330 ft. from N and W lines of most northerly NW cor. of 84.5-ac. lease, Geo. Cooper Sur. ..... Derrick.
Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartimas Sur. ..... S.D. 3,350 ft.
Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... Waiting on cmt. to set 1,313 ft.
Pitts et al's No. 1 Freeman, 1,000 ft. N of S line and 1,000 ft. E of W line of 181-ac. tract, J. Watkins Sur. ..... Rig blew down.
Priest et al's No. 1 Mayfield, 155 ft. from N and W lines of 22-ac. lease in Daniel Clark Sur. ..... Drlg. 3,000 ft.
Sullivan & Burch et al's No. 1 F. J. Cox, 330 ft. from S line and 330 ft. from W line of tract, R. H. Penny Sur. ..... Drlg. 2,815 ft.
W. W. Hinchliffee's No. 1 L. J. Pinkston, 330 ft. from E line and center of N and S lines of lease, J. B. Cadena Sur. ..... Drlg. 1,810 ft.

SMITH COUNTY

Arcadia Ref. Co.'s No. 1 Wolford, center of 10-ac. tract, J. Jordan Sur. ..... Location.
Bunte et al's No. 1 Atkinson, 1,000 ft. from S line and 1,000 ft. from N line of 330-ac. tract, Calloway Dean Sur. ..... Derrick.
Cotton Belt Oil Co.'s No. 1 C. S. Jackson, 500 ft. from N and 500 ft. from W of 39.88-ac. tract, Henry Mickleborough Sur. ..... S.D. 4,038 ft.
Sun Oil Co.'s No. 1 T. M. Sloan, 862 ft. from N line, 283 ft. from W line of 41.5-ac. lease, Juan Vargus Sur. ..... Rig up.
Tytex Oil Co.'s No. 1 Alex Weldert, 2,030 ft. from S line, 525 ft. from E line of Franklin T. Bodenheimer Sur. ..... Derrick.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ..... S.D. 2,603 ft.
Joiner et al's No. 1 Clayton Brown, 1,300 ft. from E and 400 ft. from most northerly S line of V. Evans Sur. ..... S.D. 2,250 ft.
J. P. Flannagan's No. 1 McGill, 450 ft. from S and 662 ft. from W of H. C. Riggs Sur. ..... Drlg. 6,718 ft.

UPSHUR COUNTY

Cal Petroleum Corp.'s No. 2 W. F. Glynn, 909 ft. from S line and center of E and W lines of tract, G. W. Hooper Sur. ..... Drlg. 2,585 ft.
Calhoun et al's No. 1 J. R. Penn, 265 ft. from S line and E line of Penn 104-ac. tract, Joseph Manning Sur. ..... S.D. 3,718 ft.
Cal Pet Corp.'s No. 1 W. H. Reed, 330 ft. from S and E line of 50-ac. lease, Marshall Mann Sur. ..... Rigging up.
E. L. Chapman's No. 1 D. F. Guest, 300 ft. out of NE cor. of Guest 129-ac. tract and survey ..... Derrick.
Cranfill & Reynolds' No. 1 Milton Rash, 1,687 ft. E of W line and 330 ft. N of S line of Rash estate, E. N. Eubanks Sur. ..... Tested 24 fourbles of oil; T.D. 3,728 ft.
Eastland Oil Co.'s No. 1 O. M. Victory, 330 ft. from S line and 500 ft. from the W line of survey, E. A. J. Evans Sur. ..... Top sand 3,640 ft.; tested salt water; T.D. 3,659 ft.
Glasscock et al's No. 1 T. Wells, 250 ft. from N line of survey and 1,300 ft. from W line of farm on gin site tract, G. W. Hooper Sur. ..... Drlg. 2,100 ft.
Galvey Oil Co.'s No. 1 W. W. Holland, 330 ft. from E line, 330 ft. NE of SW line of W 45 acres of Holland 246.5-ac. tract, T. Allen Sur. ..... Derrick.
Humble Oil & Refining Co.'s No. 1 C. T. Shelton, 330 ft. from W line of S 59-ac. tract and 369 ft. from S line of survey, William King Sur. ..... Derrick pattern.
Humble Oil & Ref. Co.'s No. 1 D. C. Shelton, 273 ft. from E of W line, 150 ft. N of S line of 19.5-ac. lease, Wm. King Sur. ..... Derrick.
Lewis Sikes et al's No. 1 H. Mayers, 330 ft. from W line and center of N and S lines of 25-ac. lease, A. T. McGee Sur. ..... Set 6⅝-in. csg. 3,638 ft.; base Austin chalk 3,613 ft.
J. L. Roberts' No. 1 Anna L. Jenkins, 330 ft. from E line and center of N and S lines of 37.5-ac. tract, H. Edwards Sur. ..... Set 6⅝-in. csg. 3,668 ft.; top sand 3,615 ft.
Sun Oil Co.'s No. 1 T. C. Raney, 250 ft. from S line and 200 ft. from W line of lease ..... Running casing 3,712 ft.
Shasta Oil Co.'s No. 1 E. E. Hall, 990 ft. from S line, 330 ft. from W line of 73.2-ac. tract, R. T. Gipson Sur. ..... Rig up.
Shano Oil Co.'s No. 1 D. Rodden, 356 ft. from N and S lines, 544 ft. from W and E lines of W 40 acres of S 80 acres of 100-ac. tract, Marshall Mann Sur. ..... Derrick.
W. H. Peckam's No. 1 J. B. Well, 200 ft. N and 489 ft. W of SE cor. of W 20 acres of 71-ac. tract, G. W. Hooper Sur. ..... Top Pecan Gap 2,482 ft.; drlg. 2,760 ft.
Wolf's No. 1 Cook, center of 115-ac. tract in Jacob Walker Sur., 5 miles W of Rosewood ..... Shut down 1,100 ft.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3½ miles S of Canton, M. J. Cadena Sur. ..... S.D. 2,000 ft.
Kelly Oil & Gas Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... S.D. 2,300 ft.
W. P. Palmer et al's No. 2 W. P. Forster, 600 ft. from N and 450 ft. from E of SW cor. of Forster 151-ac. tract in the F. Montgomery Sur. ..... Skidded 100 ft. south for No. 3; S.D. 1,300 ft.
Pure Oil Co.'s No. 4 W. A. York, 890 ft. W of E line and 660 ft. S of N line of W. A. York 50-ac. tract, John Walling Sur. ..... Preparing to set csg.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... Coring 2,850 ft.
Pure Oil Co.'s No. 1-T V. T. Davis, 400 ft. N of N line of Tunnell No. 3 lease, 480 ft. W of E line of Sur., Nacogdoches County School Land Sur. ..... Cmtd. 9⅝-in. csg. 3,768 ft.
Pure Oil Co.'s No. 3 H. C. Gilbert, 856 ft. E of W line, 225 ft. N of S lines of lease, Mund Gross Sur. ..... Rigging up.
Pure Oil Co.'s No. 6 N. E. Clark, 696 ft. E of W line, 200 ft. S of N line of lease, Mund Gross Sur. ..... Cement setting.
Pure Oil Co.'s No. 3 A. R. Tunnell, 741 ft. E of most westerly west line, 638 ft. N of S line of lease, John Walling Sur. ..... Cement setting.
Pure Oil Co.'s No. 2 Frank Blackstock, 150 ft. S, 150 ft. E of NW cor. lease, John Walling Sur. ..... Reaming to straighten hole 2,443 ft.
Sun Oil Co.'s No. 5 I. W. Thompson, 200 ft. S of N line, 250 ft. W of E line of lease, John Walling Sur. ..... Cement setting 313 ft.
The Texas Company's No. 3, 792 ft. S of N line, 250 ft. E of W line of lease in Nacogdoches County School Land Sur. ..... Location.

TECHNICAL PROBLEMS DISCUSSED BY REFINERS

(Continued from Page 18)

On the other hand, the vapor pressure which exists in gasoline is also somewhat flexible, Mr. Papich said, and if an automobile driver gets vapor lock from one company's gasoline he will turn to another gasoline. The automobile designers have even insulated the pump heavily to keep it from the hot oil and found that the temperature of the fuel was lowered no more than one or two degrees. Blame for the high temperatures at this point was laid upon the proximity of the fuel pump to the exhaust and the underhood temperatures. It is radiation that is causing the trouble, according to Mr. Papich, and elimination of the trouble is partly brought about by insulating the entire fuel feed system. Mr. Papich said that engineers have found much difference in carburetors, some of which operated successfully with gasoline heated up to 185° F. and other which caused failure with gasoline of 135° F.

The presentation of the paper, "The Co-operative Fuel Research Apparatus and Method for Knock Testing," by T. A. Boyd, of General Motors Corp., indicated that the long struggle to reach a standard measuring stick of antiknock quality in gasolines is nearing completion, and there was little that required further elucidation so the interesting paper by J. A. C. Warner, of the Society of Automotive Engineers, on "Troubles," followed without discussion.

Treating Methods

As an introduction to his paper, "A New Method of Refining Gasoline," Dr. Arthur Lachman, of the University of California, said: "Not many years ago the refiner had two main objectives. He wanted a product of unobjectionable odor and of good color. The question of odor offered no serious difficulties . The color problem was easily solved; if 1 pound of sulphuric acid did not do the trick, 2 pounds or 5 would. The color question entered a different phase when cracked gasoline appeared. Much more sulphuric acid was required for good color stability; but, unfortunately, cracked gasoline showed much heavier solution and polymerization losses. At the same time a new difficulty arose; cracked gasoline contained or would develop an undesirable gum content. Treatment with sufficient sulphuric acid would remove gums and prevent their subsequent formation, but the matter of losses was still to be considered. Lately the refining problem has been complicated by a new factor. The development of high compression motors called for a gasoline of good antiknock rating. Cracked gasoline possessed this quality to an eminent degree, but when treated with sufficient sulphuric acid to assure good color and gum stability, a marked reduction in antiknock rating ensued.

"As a result, we have at the present time an era of compromise. The proportion of sulphuric acid is kept as low as possible to minimize loss of octane number; consciences are stretched to permit the maximum gum tolerance in the hope that the gasoline can be marketed before customers kick, and the color problem is frankly abandoned. A new method of refining has been developed which avoids the necessity of compromise between the conflicting results of sulphuric acid treatment. In one operation it gives high yields, conserves the octane rating, reduces gums to the vanishing point and confers high color stability."

Clay Treatment

Dr. M. R. Mandelbaum, of Gray Processes Corp., was called upon to discuss the paper read by Doctor Lachman, and his first statement was to correct any thought that the clay vapor catalytic method was not widely distributed and he pointed out that this contact method was now being used to refine over 30,000,000 bbls. of cracked gasoline per year in this and foreign countries. Doctor Mandelbaum also took issue with Doctor Lachman's statement that "clay contact varies considerably in its effect; on some stocks it works admirably. On others, the time of contact must be doubled or trebled; on distillates such as California produces, it seems to be quite ineffectual." That this statement is not quite accurate, was the contention of Doctor Mandelbaum. "The doubling or trebling of time of contact to which he refers," Doctor Mandelbaum said, "is not so much an increase in the time of contact as the increase in the ratio of fuller's earth needed per barrel of distillate. This is of course not very different from the different ratios of zinc chloride to barrel of distillate treated, which varies from 1 to 10 pounds, according to Doctor Lachman. Of course when the clay is being used in the stationary bed you have to increase the size of the apparatus, or perhaps provide several beds of clay, but where the clay is used in a continuous stream you can also vary the amount of clay used without increasing the size of the apparatus.

Sulphur Problem

"Then as regards the statement that clay vapor treating is quite ineffectual as regards gum reduction of California gasoline, we have found," "Doctor Mandelbaum said, "on the contrary that good gum reduction can be obtained in most cases of cracked California gasoline. The chief difficulty in refining California products, of course, and that applies not only to the clay vapor phase treatment, but to the zinc chloride as well, is the reduction of the sulphur content. I must admit that I am disappointed with the results Doctor Lachman obtained with sulphur content. By adding copper oxide or other desulphurizing materials to fuller's earth or clay, or using other desulphurizing materials in a separate tower, it is possible to get quite as good results as the 25 to 40 per cent that he mentions. Unfortunately that is not enough in the case of most high sulphur distillates. The statement is made that there is no loss of color and no increase of gum test on doctor sweetening of clay treated distillates. As a matter of fact doctor sweetening usually lowers the gum test. Gums in the range of 30 to 40 milligrams to the sour distillates have been lowered to 5, 10 and 15 m.g.s."

Doctor Mandelbaum concluded that in the zinc chloride process the purification as regards color and gum "is effected by the polymerizing properties of zinc chloride on certain of the hydrocarbons present, which may be present, however, in very small quantities. Apparently in hot concentrated solution these properties are manifested in the same way as by anhydrous zinc chloride at ordinary temperatures."

Doctor Lachman responded and gave assurance first that it was not his intention to make unfair comparisons with the clay contact and the sulphuric methods of refining, and he asked, also, that the unreliability of the copper dish test method for gum be kept in mind when making gum comparisons. Answering Doctor Mandlebaum's inquiry about the stocks used, Doctor Lachman said:

"The figures given refer exclusively to one kind of stock, costs and analytical figures (Cf. The Oil and Gas Journal, November 12, page 30). This is a cracked distillate prepared from gas oil by the Black process, the cracking being conducted at a temperature of around 850° to 860° F., and at a pressure of approximately 1,000 pounds. The comparison figures as to costs cover exactly the same stock with only the time difference, one being the figure obtained since May of this year, and the previous figures covering operations for the year 1930 from January 1, to December 31. As to the cost, zinc chloride in terms of pounds per barrel, is 1.6 cents per barrel. Our zinc chloride has cost us varying amounts. The first lot cost us 4½ cents a pound. We were unable to get sufficient delivery and we paid 5 cents a pound premium for more. We are now offered zinc chloride under contract at around 3½ cents a pound. The net consumption is around 0.3 pound per barrel. As to repairs we found that the wearing qualities of copper depended primarily on the degree of annealing, so we have not had that expense, in a degree worth mentioning, on the first six months of operation on the present line.

"As to the polymerization with zinc chloride under anhydrous, as referred to by Doctor Mandelbaum, I have made experiments with polymerization with strong solutions, around 85 per cent, where contact was established in sealed glass tubes. As much as 25 per cent polymerization was noted. Polymerization is a reaction requiring measurable time. It proceeds at a relatively slow rate, as we measure rates of organic reactions. If polymerization were maintained for one minute or an hour we would get much higher figures than we now obtain."

Doctor Lachman defended his comparison of figures relating to sulphuric acid treatment where the acid is used in large amounts for sulphur reduction. The only misleading point seen by Doctor Lachman was the statement in his paper in regard to the 73 per cent recovery with acid treat. It would have been possible to get a better recovery with a higher endpoint stock, but, according to Doctor Lachman, the stability as to color and gum was so poor that even at 375° it was found desirable to sacrifice yield of gasoline and minimize the shipping and storage problems.

ANOTHER PIPE LINE OUT OF WAYNE, N. Y., FIELD BY LYCOMING GAS CO.

By Special Correspondent

WELLSBORO, Pa., Nov. 14.—The Lycoming Natural Gas Co., a subsidiary of the Standard Oil Co. of New Jersey, announced the award of a contract for the construction of a 25-mile 10-inch pipe line from the Wayne Field in Schuyler County, New York, to Penn Yan, N. Y., to Rich & Co., Bradford, Pa.

The line will probably be completed in about two months' time. The Lycoming company controls the output of a large portion of the field's gas having previously made contract with most of the operating companies in the field. It was not divulged where the line would go after reaching Penn Yan, although it is expected that towns in central New York State in the vicinity of Geneva, Waterloo, or Canandaigua will be in its path.

The letting of the contract indicates that Lycoming has an assured market for the Wayne Field gas in central New York State. No announcement of such contracts was made. Negotiations were still said to be under way with the Niagara Hudson Power Corp. and the reopening of the construction of the John B. Tonkin 20-inch line northeast from the Tioga Field is also expected.

Hungiville and others' No. 1 Booth, between Coudersport and Shinglehouse, Potter County, Pennsylvania, was drilled into the sand at a depth of about 4,955 feet and the well cleaned itself out and proceeded to produce 8,000,000 feet of gas the first 24 hours. This well showed for a gas well two or three weeks ago and much leasing has been done since it first gave signs of being a producer. Now that it is assuredly a gas well of more than usual proportions for Potter County it will mean a revival of drilling in that county, which is an old gas producing region, although one that had been slipping for years.

On the New York side of the New York-Pennsylvania gas field a 6,400,000-foot well was completed by the Belmont Quadrangle Drilling Co. in No. 1 Ruddick in the Dundee Field in Yates County. It is sour gas which is characteristic of that field. Other wells in the Dundee Field are about due for completion.

The York Penn Gas Co.'s No. 1 Dickinson, near Troy, in western Bradford County was drilling at 4 feet in the Onondaga limestone at a depth of about 4,620 feet. The Oriskany, if in place, will be found below the Onondaga lime. This is regarded as an important test, lying about 25 miles east and a little south of the Tioga gas field but west of other tests in Bradford County.

CRANE PRESIDENT DIES IN NEW YORK HOSPITAL

Funeral services for Richard T. Crane, Jr., president of the Crane Co., who died November 7, his fifty-eighth birthday, in the Doctors Hospital, New York, following an attack of heart trouble, were held Wednesday, November 11, in St. Chrysostom's Church, Chicago. Burial was in Graceland Cemetery, Chicago.

Mr. Crane, who was born in Chicago, entered the service of the Crane Co. shortly after his graduation from Yale University in 1895 and he had been president of the organization since 1914. Dur-

Richard T. Crane, Jr.

ing his administration the great Chicago works, and the plants in Montreal, Canada; Paris, France, and Ipswich, England, were built. He established the Crane Export Corp.; Crane-Bennett, Ltd., England, and Cie Crane, France and Belgium. He built potteries in Trenton, N. J., and Quebec; enameled iron works in Chattanooga, Tenn., and shops in Birmingham, Ala. He increased the number of Crane branches from 46 to 196 and the number of employes from 7,000 to 20,000.

Mr. Crane's gifts and philanthropies were many. In 1921 he built the Benjamin Stickney Cable Memorial Hospital in Ipswich, Mass. In 1927 he donated a tower and carillon to St. Chrysostom's Church, Chicago, in memory of his father and mother. Two years later he gave "Buffalo Rock," near Ottawa, Ill., to the State of Illinois for use as a state park.

Thousands of Crane employes were known personally by the head of the company. His affection for them was well known. In 1915 he organized the Crane Veterans' League. During recent years he gave from his own holdings common stock in the company of a total value of more than $10,000,000. Earlier this year Hobart College conferred upon him the degree doctor of laws.

Mr. Crane leaves his wife, who was Miss Florence Higinbotham, and two children.

NEW OIL DISTRICT IN MEXICO

Oil in commercial quantities has been discovered in a new district near San Pedro de Los Pinos, in the state of Coahuila, the petroleum department of the Mexican Secretariat of Industry, Commerce and Labor states.

Brief Items for Petroleum Refiners

Filling Station Chains Do Third Retail Business

Census of distribution of the Department of Commerce figures show that the so-called chain stations do approximately one-third of the filling station business in the United States. In 1929 the sales of all filling stations totaled approximately $1,880,000,000, while the sales of chain stations amounted to $629,024,296. There were 864 filling station chains, operating 30,050 stations, approximately one-fourth of the total.

The distribution report also shows that the average annual sales of chain stations was $20,933 as compared with approximately $14,000 for independent stations. The chain stations reported a pay roll of $81,239,000—$79,630,419 for 60,761 full-time, and $1,608,966 for 4,189 part-time employes.

That the larger chains dominate the filling station chain field is indicated by the fact that more than 49 per cent of the total sales of all the chains was made by 14 chains with 500 stations or more each, which operated a total of 15,886 stations, more than half of all the chain stations in the country. The next largest classification was made up of 25 chains of 100 to 500 stations each, which operated a total of 6,144 stations and reported sales of $108,400,000, or 17 per cent of the total.

There were 18 chains operating between 50 to 100 stations, 36 chains operating 26 to 50 stations each, 132 chains with 11 to 25 stations each, 264 chains with 6 to 10 stations each, and 375 small chains with less than 6 stations each. These small chain systems operated 1,587 stations, with total business of $46,956,000, which was 7.46 per cent of the total chain sales. These very small chains also showed the largest average sales per station, $29,588 in comparison with an average for largest chains of $19,432, and for all chains of $20,933.

There were 770 local chains operating 6,953 stations; 83 sectional chains, operating 15,585 stations, and 11 national chains. The local chains accounted for 29.8 per cent of the total filling station chain business; the sectional chains for 49.3 per cent of the total, and the national chains for 20.9 per cent of the total.

Statistics on operating expenses for filling station chains: Number of chains, 864; number of stations, 30,050; number of employes, 64,950; salaries and wages, $81,239,385; other operating expenses (including rent), $68,258,916; stock on hand at end of year, $17,447,694; net sales, $629,024,296; total operating expenses—per cent to sales, 23.77.

HOWARD COUNTY TAKES OVER BIG SPRING PLANT

The Howard County Refining Co. has been organized to take over the operation of the Big Spring Refining Co. plant at Big Spring, Tex. The refinery had not operated for several months but recently was reconditioned and has been running crude since October 20.

The new company was chartered in Texas and following are the officers: R. T. Piner, president, Big Spring; J. E. Bristow, vice president, San Angelo; Joseph Edwards, general manager, Big Spring, and G. H. Hayward, secretary and treasurer, Big Spring.

The following are stockholders and directors in this company: R. T. Piner, Joseph Edwards, G. H. Hayward, F. W. Merrick, Ardmore, Okla.; J. E. Bristow, San Angelo, and Mrs. Dora Roberts, Big Spring, Tex.

ETHYL CORPORATION TO PROVIDE FOR REGULAR GRADE MOTOR FUEL

NEW YORK, Nov. 14.—Ethyl Gasoline Corp. has announced plans for the marketing of a new product, virtually a second grade of Ethyl Gasoline, to enable refiners now marketing Ethyl blends to offer in addition regular grades of gasoline treated with antiknock fluid. The new product, which will be known as "Q" antiknock compound, is to go on sale March 1, 1932, and is designed to standardize and increase octane rating of regular grades of motor fuel.

These, at least are the plans of the company although the final form of the contract for the marketing of the new "Q" brand of motor fuel will not be submitted until all questions raised during the discussion of the question at the recent A. P. I. meeting in Chicago have received full consideration.

The antiknock compound to be sold under the new contract will not be the "Ethyl" compound but a slightly different formula, containing the same basic chemicals, the difference being required by the change in maximum permissible concentration from 3 cc. to 1½ cc. of tetraethyl lead per gallon of gasoline and by the use of a dye different from the red dye used in Ethyl fluid.

The contract for the new "Q" compound is in many instances similar to that for regular "Ethyl," the clauses covering the name under which refiners will market the new blend, an agreement that the refiner manufacturing the new product will not sell any other gasoline of substantially similar color, and close regulations to govern advertising of the new product.

Reasons for Change

While the new product is not expected to meet with universal approval among refiners, Ethyl Gasoline Corp. admits, it is felt that conditions in the industry required the introduction of the "Q" compound. In a letter to its refiner-licensees explaining the new compound and some of the reasons leading up to its adoption, the company says, in part:

"To prevent confusion between the new product and 'Ethyl' compound the new product will bear a separate designation. It will be called 'Q' antiknock compound. This designation 'Q' will be applied not only to containers in which the antiknock fluid is shipped but will be carried through to the lead sign on the pumps from which the gasoline is dispensed. This will be done by stencilling the letter 'Q' on the face of the lead sign. It is believed that this will minimize as far as practicable any tendency to confusion in the mind of the public between regular leaded gasoline and 'Ethyl' gasoline. The visual distinction between the two products will be as follows:

"1. The name 'Ethyl' will not appear in any way in connection with the regular priced gasoline containing lead.

"2. The regular priced gasoline will be of various colors other than red.

"3. The pumps from which 'Ethyl' is sold will continue to carry the present markings whereas the lead sign on the pump dispensing regular priced leaded gasoline will appear in association with the distinct 'Q' trademark.

"The public health provisions for the 'Q' antiknock fluid are the same as those that apply to 'Ethyl' fluid.

"It is our view that the effect of the adoption of the present proposal by our customers will be to bring about an approximate standardization of octane number of regular price gasoline throughout the United States at a level about equal to the best of such gasoline now being generally distributed. This result we believe is desirable and economically sound because it will permit and by competition require car manufacturers to standardize on knocking tendency of their motors at the maximum level practicable for regular price gasoline. Such an effect on motor design cannot be obtained solely through the premium gasoline route since the latter is shown by experience to be effective only in influencing the design of the higher price cars.

"The relation of the use of lead to improvement in octane value (in the range of 50 to 70) is about one full octane number for each one-tenth cc. of lead used. Under this proposal, therefore, the octane rating of regular price gasoline can be increased by 3 to 15 numbers, which is substantial and important in car design.

"The production of popular-priced cars at a level of 68-70 octane gasoline would establish a further substantial demand for premium gasoline since a very large proportion of cars designed for satisfactory operation when new and clean on 68-70 octane gasoline would in time through accumulation of carbon and

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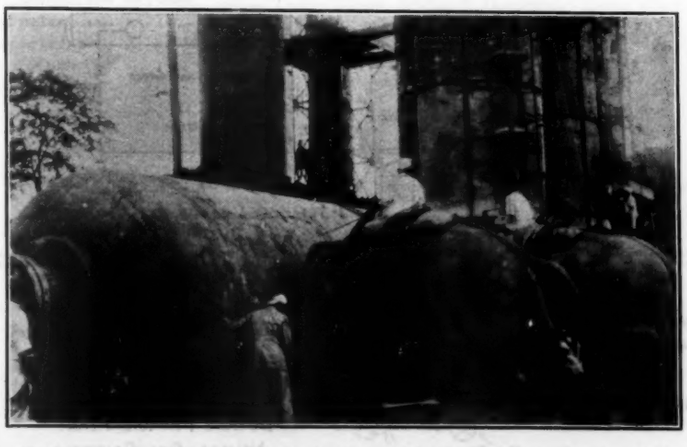
ELEPHANTS MOVE REACTION CHAMBER



Elephants moving Dubbs reaction chamber into position for hoisting at the plant of the Assam Oil Co., Digboi, India. The chamber weighs 90 tons.

CUBA PROPOSES DRASTIC OIL TARIFF DECREASE

NEW YORK, Nov. 16.—A bill proposing drastic revisions in the Cuban tariff on petroleum imports was passed by a vote of 23 to 1 in the Cuban senate this week, and American companies, now virtually barred from operating in Cuba due to the tariff wall, are watching closely for further action on the measure.

At present there is but one refinery in Cuba, that of the Standard Oil Co. of Cuba, subsidiary of the Standard Oil Co. (New Jersey). This plant, located at Belot, across the bay from Havana, employs 500 men, and has taken care of the bulk of Cuba's petroleum requirements, due to the high tariff protection it enjoys.

The proposed revision in the tariff rate would open the Cuban market to refined products from the United States and elsewhere. The bill, which has yet to be acted upon by the house and President Machado, reduces the import duty on crude petroleum for refining to one-tenth cent per gallon and the import duty on gasoline to 1 cent per gallon. It also provides a sales tax of 4 cents per gallon on gasoline, in addition to the public works tax of 10 cents per gallon. The measure also proposes a sales tax of 6 cents per gallon on special naphthas for tractor fuel, 20 cents per gallon on petroleum lubricants, and 8 cents per gallon for kerosene, but substantially lowers import duties on these products.

The current measure is the result of recommendations made by Dr. H. H. Manning, who was retained by the Cuban government a few years ago to survey the oil tax laws of that country.

NEW REFINERY PLANNED

CHATHAM, Ontario, Nov. 14.—Major W. A. Beckett of St. John, New Brunswick, representing eastern Canada interests has been conferring with independent oil operators in the Turner Valley Field with regard to a new refinery project for the Calgary district. It is proposed to capitalize the new company at $1,500,000 of which $1,200,000 will be financed by the eastern interests and $300,000 set aside for subscription by operators.

The initial plant will be of 2,000 bbls. capacity and will probably be located at or near Calgary. No pipe line to the field is contemplated in the immediate future, but tank trucks will be used, which can later be diverted to marketing should a pipe line be constructed. The project also contemplates the manufacture and marketing of liquefied gas. If arrangements can be completed, the refinery will be in operation by the spring of 1932.

COUTTS REFINERY SOLD

CHATHAM, Ontario, Nov. 14.—Shareholders of the Maple Leaf Oil & Refinery Co. of Coutts, Alberta, have ratified the sale of the company's undertaking to Maple Leaf Petroleum, Ltd., a company recently organized to take over and operate the plant. John P. Akolt of Denver, Colo., for many years associated with the oil business in the Rocky Mountain areas, is the leading figure in the new company, which is planning to improve and extend the plant and to expand operations in Alberta. The Maple Leaf refinery was established some years ago.

ADD STABILIZING UNIT

The Rock Island Refining Co. is adding a gasoline recovery and stabilizing unit at its Duncan, Okla., refinery, and has purchased the gathering and trunk lines of the Duncan-Wichita Falls Pipe Line Co. This pipe line will bring crude from the Stevens County Pool to the plant.

Manufacture of Natural Gasoline

Potential Output Of East Texas Field Near 500,000 Gallons

FORT WORTH, Tex., Nov. 16.—So far only two natural gasoline plants have been constructed and put into operation in East Texas, with one smaller plant under construction. The Humble Oil & Refining Co. was the first to erect plants, one, 5,000,000 feet daily capacity at Kilgore, and a larger one, with 10,000,000 feet daily capacity at London. The latter is operating at about one-third of its capacity, or using a little better than 3,300,000 feet per day, while the latter is not running to capacity as yet. The Lisbon Gasoline Co. is the second company to start construction of a plant. It is located in the southern part of the Joiner area, Rusk County.

The gasoline content of natural gas from the wells in East Texas averages around 3.7 gallons per 1,000 feet. For that reason the district should be exceptionally interesting to natural gasoline companies. Due to the condition of the oil industry during the past year, which has not been conducive to gasoline plant construction, companies have withheld entering the district although several companies have proposed the construction of plants, and will no doubt carry out such plans, especially for the purpose of repressuring the sands.

With 3,000 wells producing in the field at the present time, each allowed 125 bbls. per day, and making 350 feet of gas per barrel this makes a total of around 131,250,000 feet of gas being produced with the oil. Two plants are now assimilating only around 5,000,000 feet of this amount, which leaves better than 126,000,000 feet blowing into the air, or being wasted, from the standpoint of the gasoline plant operator, or the evaporation of around 12,000 bbls. of natural gasoline per day.

The waste of gas was the greatest during the first two weeks in August, before martial law went into effect on August 17, when all producing wells were shut in. During those two weeks the field was producing at the rate of over 800,000 bbls. of oil per day, all of the gas from the wells blowing into the air. It was estimated that around 28,000 bbls. of Grade AA natural gasoline was lost through this wastage of the natural gas. This meant a loss of approximately $47,000 per day, based on the assumption that Grade AA natural gasoline is selling for 4 cents per gallon, this loss accruing to the oil producer, landowner and royalty owner.

Charles F. Roeser, president of the newly organized Texas Oil and Gas Conservation Association, oil producer and natural gasoline manufacturer, who has been making a survey in East Texas with the idea of constructing a natural gasoline plant in northern Gregg County where his company has production, definitely announced his stand against the continuance of waste of gas in the field when speaking before a group of men at

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DOME COVER CHANGE EXTENDED

Because there still remains more than 850 cars which have not been equipped with dome covers which may not be removed while the car is under pressure, the U. S. Bureau of Explosives has expressed a willingness to extend the date at which all cars must be so equipped until July 1, 1932. This has been announced provided there are no objections filed before November 22. The request for the extension was made by the A.P.I. and is the second extension of time to be sought.

PROCESS DISTRIBUTES STRAIGHT LIQUEFIED GAS TO CONSUMERS

By H. W. Wickstrom*

A great potential output for butane and propane obtained from natural gasoline plants and refineries is through distribution systems in towns ranging in population from 1,000 to 15,000. Approximately 3,000 communities of this size in the United States are without gas service at the present time. The reason has been that it was found uneconomical to serve such towns with manufactured gas on account of the high investment and operating costs. If the rates were established high enough to make the system pay, the competition of other sources of energy cut down the load and if the rates were lowered to build up the load then there remains little or no profit.

Butane or propane distribution systems in towns of this size can be built and operated to show a remarkable profit on the investment when the plant and distribution costs are kept to a minimum and the plants are designed for full automatic control. There are two common systems now in vogue—one the air butane method and the other the straight method of distribution, each of which have their advantages. In the air butane plants the butane is received in tank car lots and stored in pressure tanks. The butane is drawn off the tanks, vaporized and diluted with air till the mixture reaches a calorific value of 550 B.t.u. per cubic foot. The gas is then stored in holders at a pressure of 10 to 30 pounds per square inch and released to the mains as demanded. The distribution systems are designed for high or low pressure dependent upon the layout of the towns and when high pressure distribution is used pressure regulators are installed at each house to release the pressure to 8 inches of water at the burner.

A more recent method of distribution, and in my opinion a more economical and satisfactory one, is the distribution of the straight product to the consumer. Instead of using straight butane a mixture of approximately 29 per cent propane, 25 per cent isobutane and 46 per cent n-butane is utilized. This mixture will have a maximum vapor pressure of less than 80 pounds gauge at 70° F. and will leave no liquid residue at 32° F. and atmospheric pressure. When vaporized, the gas will contain 3,000 B.t.u. per cubic foot and forms a hot, clean, blue flame when burned that is decidedly satisfactory for domestic use.

This liquid is shipped from the source of supply to the plant in Class 105A400 tank cars. These cars have a capacity of approximately 10,000 gallons and are novel in their design as compared to ordinary tank cars.

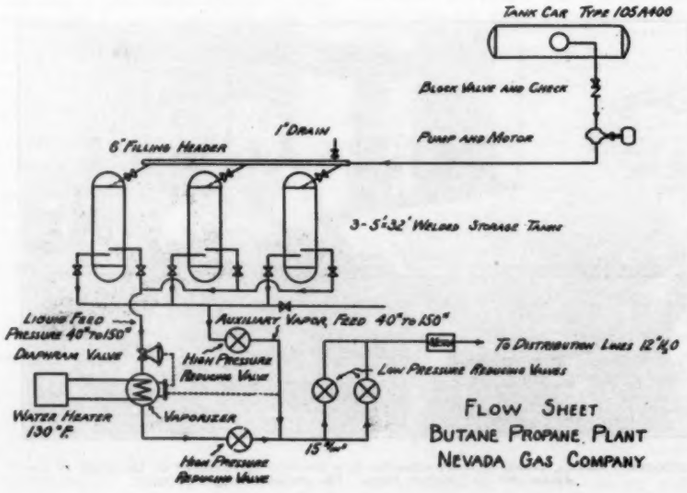
The cars are insulated and have no bottom connections or outage domes. They are built to operate at high working pressures the safety valves being set to pop at 300 pounds per square inch and are vapor tight at pressures as high as 240 pounds per square inch. There is a false dome with a cover on top of the car that contains the discharge valves, gauging device and pop valves. The cars are equipped with two 2-inch discharge valves piped from the bottom of the tank and equipped with vertical check valves for safety. In unloading, care is necessary as the checks will close if the liquid is drawn off too fast. The cars are also equipped with a 2-inch vapor valve which is also equipped with a vertical check.

This valve is used while unloading the cars for a vent connection or as a connection for blowing the car to unload. There is a thermometer well that reaches down into the liquid in order to take the temperature on arrival. The gauging device consists of a sliding tube calibrated in inches with a needle valve at its top. The liquid level of the car on arrival is determined by raising the tube to its maximum height and cracking the needle valve. Gas will escape. The tube is then lowered slowly by means of a small ratchet and clamp until liquid flows from the needle valve. The outage is read directly from the gauge marks on the tube. The level of the liquid in the car can be determined at any time by moving the tube up or down and reading the outage direct.

The flow shut in Figure 1 shows the simplicity of this type of plant and the method of its operation and automatic control will be explained. The 2-inch unloading valve on the tank car is connected to the suction line with 20 feet of 2-inch metallic hose. The end of the suction line is equipped with a valve and a check valve. When the connections are made the car of liquid gas is pumped into the plant storage tanks. The pump capacity is approximately 50 gallons per

(Continued on Page 103)

*Monthly meeting, California Natural Gasoline Association.



FLOW SHEET
BUTANE PROPANE PLANT
NEVADA GAS COMPANY

STANDARD GASOLINE CO. MAKES MINOR CHANGES

Minor changes have been made in the operations of the 59 gasoline plants and booster stations of the Standard Gasoline Co. in California in the past eight months, consistent with the changing conditions of gas supply and the market for gasoline. Plants which have been temporarily shut down in that time include the Kraemer No. 2 at Kraemer, the Cherry Avenue plant at Long Beach, the Lloyd plant in Ventura Field, the Newhall plant and the Wheeler Ridge plants. Collectively, these plants represent a capacity of 21,500 gallons per day.

The status of the individual plants at present is shown in tabular form below.

Field—	Capacity gasoline (gals.)	Status
Santa Fe Springs	15,000	operating
Santa Fe Springs	45,000	operating
Santa Fe Springs	booster	operating
Santa Fe Springs	46,000	operating
Montebello*	.....	shut down
Montebello*	booster	shut down
Murphy-Coyote	20,000	operating
Kraemer†	.....	shut down
Brea	6,500	operating
Huntington Beach†	.....	shut down
Huntington Beach†	.....	shut down
Huntington Beach	20,000	operating
Huntington Beach	20,000	operating
Huntington Beach	10,000	operating
Huntington Beach*	booster	shut down
Huntington Beach†	.....	shut down
Seal Beach	40,000	operating
Seal Beach	15,000	operating
Long Beach†	.....	shut down
Long Beach	7,000	operating
Long Beach†	.....	shut down
Long Beach	30,000	operating
Dominguez	6,755	operating
Athens*	.....	shut down
Inglewood†	.....	shut down
Inglewood*	.....	shut down
Inglewood	7,500	operating
Torrance*	.....	operating
Torrance	6,000	operating
Whittier	375	operating
Cypress	4,500	operating
Ventura†	.....	shut down
Ventura	40,000	operating
Ventura	40,000	operating
Ventura	booster	operating
Newhall†	.....	shut down
Taft	30,000	operating
Taft	30,000	operating
Taft	6,000	operating
Taft	6,000	operating
Taft	10,000	operating
Taft	7,500	operating
Taft	15,000	operating
Taft*	.....	shut down
Taft*	.....	shut down
Taft*	.....	shut down
Taft*	.....	shut down
Taft†	.....	shut down
Taft†	.....	shut down
Taft*	.....	shut down
Taft*	.....	shut down
Taft*	.....	shut down
Taft*	.....	shut down
Wheeler Ridge	.....	shut down
Kettleman Hills	110,000	operating
Kettleman Hills	140,000	operating
Kettleman Hills	140,000	operating
Lost Hills*	.....	shut down

*Shut down, partially dismantled and abandonment contemplated. †Shut down, but available for operation.

NEW EAST TEXAS PLANT

FORT WORTH, Tex., Nov. 17.—George Ames, associated with Cherokee Chief Oil Co. plans to erect a 4,000,000-foot capacity casinghead gasoline plant at Gladewater near topping plant belonging to Ames now operating. He will increase recovery of gasoline by blending casinghead gasoline with gasoline from refinery and cut down fuel oil which does not have as large demand as previously.

Humble Oil & Refining Co. is planning on extending gas gathering system another 15 miles in Gregg County. Humble's casinghead plant at London is running only one-third capacity natural gas and not processing out over 3 gallons per 1,000 feet.

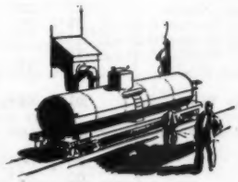
CARS WHEREVER
and *whenever* you need them

At ten strategic points throughout the country General American maintains repair plants and storage yards. These serve as terminals for General American's fleet of cars.

The 50,000 cars in the General American fleet, and the strategic location of the General American terminals, provide a transportation service upon which you may always depend.

No matter where you are, or how urgent is your need for cars, you can get from General American *all the cars you want . . . of the particular type you want . . . when and where you want them.*

The convenient location of the General American shops, which maintain a complete stock of tank car parts at all times, enables you to have repairs made without unnecessary delay. No time is lost waiting for the necessary replacements to come from some distant factory. Your cars are back on the rails again in the quickest possible time.



General American has perfected special tank cars for the carrying of butane and propane. If you're shipping either of these products you should investigate them.

GENERAL AMERICAN
TANK CAR CORPORATION

GATX GENERAL AMERICAN

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Nov. 17		Nov. 10		Nov. 3	
50-52 450 endpoint	.04¼		.04¼		.04	
56-58 450 endpoint	.04⅛	.04¼	.04¼		.04¼	
58-60 U. S. Motor	.04⅜	.04¾	.04½	.04¾	.04¼	.04⅝
60-62 430 endpoint	.04½	.04¾	.04½	.04¾	.04¼	.04⅝
60-62 400 endpoint	.04½	.04⅞	.04⅝	.04⅞	.04⅜	.04¾
64-66 375 endpoint	.05	.05⅛	.05⅛	.05¼	.04⅞	.05
68-70 360 endpoint	.05⅛	.05¼	.05¼	.05½	.05¼	.05½
64-66 437 endpoint (blend)	.04¼	.04½	.04½	.04¾	.04	.04¼
NORTH TEXAS—						
50-52 450 endpoint	.04⅛		.04¼		.04	
58-60 450 endpoint	.04		.04¼		.04	.04⅛
58-60 U. S. Motor	.04¼	.04½	.04⅜	.04½	.04⅛	.04⅜
60-62 400 endpoint	.04⅜	.04½	.04½		.04¼	.04⅝
64-66 390 endpoint	.04⅜	.04⅞	.04⅝	.04⅞	.04⅝	.04¾
64-66 375 endpoint	.04⅞	.05⅛	.05	.05⅛	.04¾	.05
68-70 360 endpoint	.05	.05¼	.05⅛	.05½	.05⅛	.05¼
64-66 437 endpoint (blend)	.04		.04¼	.04½	.04	.04¼
***NORTH LOUISIANA—**						
58-60 U. S. Motor	.05		.05		.04½	
***ARKANSAS—**						
58-60 U. S. Motor	.05		.05		.04½	
PENNSYLVANIA—						
52-54 Naphtha	.04½		.04¼		.04¼	
54-56 Naphtha	.04¼	.04½	.04¼	.04½	.04¼	.04½
58-60 Gasoline	.04½	.04¾	.04½	.04¾	.04½	.04⅞
60 Gasoline	.04⅝	.05	.04⅝	.05	.04¾	.05
62 Gasoline	.05	.05¼	.05	.05¼	.05	*.05¼
64 Gasoline	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜
68-70 350 endpoint gasoline	.05½	.06	.05½	.06	.05⅜	.06
CALIFORNIA—						
†54-58 U. S. Motor (domestic)	.05½	.06½	.05½	.06½	.05½	.06¾
58-60 400 endpoint domestic gasoline	.06	.07¼	.06	.07¼	.06	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.04⅛	.04⅜	.04⅜	.04½	.04	.04⅛
58-60 U. S. Motor	.04⅜	.04⅝	.04½	.04¾	.04¼	.04¼
60-62 400 endpoint	.04⅝	.04⅞	.04¾	.05	.04¼	.04⅝
64-66 375 endpoint	.04⅞	.05⅛	.05	.05⅛	.04¾	.05
68-70 360 endpoint	.05¼	.05½	.05¼	.05½	.05⅛	.05¼
64-66 437 endpoint (blend)	.04½		.04½		.04	
GULF COAST (Export)—						
58-60 U. S. Motor	.04½		.03⅞	.04	.03¾	.03¾
60-62 400 endpoint	.04⅝		.04⅛		.04⅛	
61-63 390 endpoint	.04⅝		.04¼		.04⅛	
64-66 375 endpoint	.05		.04½		.04½	

*Louisiana, Arkansas and Mississippi delivery. †For Pacific Coast consumption.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Nov. 17		Nov. 10		Nov. 3	
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝		.04¾	.04⅞	.04¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¾	.04½	.04½	.04¾	.04⅝	.04¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅜	.04½	.04½	.04¾	.04⅝	.04¾
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼	.04⅜	.04½	.04¾	.04⅝	.04¾
Grade C, 80-92, 375 e.p., rec. 78%	.04¼	.04⅜	.04½	.04¾	.04⅝	.04¾
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04½		.04⅝		.04⅝	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅛	.04¼	.04¼	.04⅜	.04⅜	.04½
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅛	.04¼	.04¼	.04⅜	.04⅜	.04½
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅛	.04¼	.04¼	.04⅜	.04⅜	.04½
Grade C, 80-92, 375 e.p., rec. 78%	.04	.04¼	.04¼	.04⅜	.04⅜	.04½
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04⅝	.04¾	.04¾		.04¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅝	.04¾	.04¾		.04¾	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅝	.04¾	.04¾		.04¾	
CALIFORNIA—						
75-78 375-390 endpoint	.05½	.06½	.05¼	.06½	.05¼	.06¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04¾		.04½	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¾	.04½	.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¾	.04½	.04½		.04½	

BURNING OIL

OKLAHOMA (Group 3)—	Nov. 17		Nov. 10		Nov. 3	
41-43 water white kerosene	.02⅛	.02¼	.02⅛	.02¼	.02	.02¼
42-44 water white kerosene	.02¼	.02¼	.02¼	.02⅜	.02⅛	.02⅜
NORTH TEXAS—						
41-43 water white kerosene	.02⅛		.02	.02⅛	.02	.02⅛
40-41 water white kerosene	.02		.02		.02	
***NORTH LOUISIANA—**						
41-43 water white kerosene	.03	.03¼	.02¾	.03	.02¾	
***ARKANSAS—**						
41-43 water white kerosene	.03		.02¾	.03	.02¾	
PENNSYLVANIA—						
43 Kerosene prime white	.03½		.03½		.03½	
45 Kerosene water white	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
46 Kerosene water white	.03⅞	.04	.03⅞	.04	.03⅞	.04
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04½	.05½	.04	.05	.04	.05
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.02¼	.02¼	.02⅛	.02¼	.02	.02⅛
42-44 water white kerosene	.02¼	.02½	.02¼	.02½	.02⅛	.02⅝
GULF COAST (Export)—						
41-43 prime white	.04¼	.04½	.03¾		.03¾	
44 prime white	.04	.04¼	.03½		.03½	.03¾

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Nov. 17		Nov. 10		Nov. 3	
Below 18 gravity Fuel Oil, per bbl.	.25	.30	.25	.30	.25	.30
18-22 Fuel Oil, per bbl.	.30	.35	.30	.35	.30	.35
20-22 Fuel Oil, per bbl.	.32½	.37½	.32½	.37½	.32½	.37½
22-26 Fuel Oil, per bbl.	.35	.40	.35	.40	.35	.40
24-26 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
26-30 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.50
28-30 Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
32-36 Gas Oil (industrial)	.01¾	.01½	.01⅝	.01½	.01⅝	.01½
32-36 Gas Oil (straw color, high cold test)	.01¼	.01⅝	.01¼	.01⅝	.01⅝	.01½
32-36 Gas Oil (straw color, low cold test)	.01⅝	.01¾	.01⅝	.01¾	.01⅝	.01¾
36-38 Distillate	.01¾		.01¾		.01¾	
38-40 Straw Distillate	.01¾	.01⅞	.01¾	.01⅞	.01¾	.01⅞

Note—Fuel oils over 40 cold test generally 5 to 10 cents per barrel less when available.

NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.35	.45	.35	.45	.35	.45
24-26 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
32-36 Gas Oil (industrial)	.01¼	.01⅜	.01¼	.01⅜	.01¼	.01⅜
38-40 Straw Distillate	.01⅝	.01¾	.01⅝	.01¾	.01⅝	.01⅞
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
30-32 Gas Oil (low cold test)	.02		.02		.02	
***ARKANSAS—**						
33-36 Distillate	.02		.02		.01¾	.02
30-32 Gas Oil	.01¾	.02	.01¾	.02	.01¾	
16-22 Refinery Fuel Oil, per bbl.	.35	.50	.35	.50	.35	.50
GULF COAST (South Texas)—						
Gas Oil	.02¼	.02½	.02¼	.02½	.02¼	.02½
Bunker C Fuel (cargo lots), per bbl.	.40	.45	.40	.45	.40	.45
Bunker C Fuel (small lots)	.45		.45		.45	
PENNSYLVANIA—						
30-34 Gas Oil	.02⅝		.02⅝		.02¾	
36-40 Gas Oil	.02⅝	.02¾	.02⅝	.02¾	.02¼	.03
CALIFORNIA—						
42-45 480 endpoint engine distillate	.07	.08	.07	.08	.06¾	.07¾
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.80	.60	.80	.60	.80
15-19 Fuel Oil, cargo lots (tidewater), bbl.	.55	.75	.55	.75	.55	.75
†15-19 Fuel Oil (f.o.b. tank cars), bbl.	.45	.75	.45	.75	.45	.75
27 plus Diesel, per bbl.	.80	.95	.80	.95	.80	.95
30-34 Gas Oil	.75	.95	.75	.95	.80	.95
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.32½	.37½	.32½	.37½	.30	.35
22-26 Fuel Oil, per bbl.	.37½	.42½	.37½	.42½	.35	.40
28-30 Fuel Oil, per bbl. (zero)	.52½	.57½	.52½	.57½	.50	.55
32-36 Gas Oil (industrial)	.01⅝	.01¾	.01⅝	.01¾	.01½	.01⅝
32-36 Gas Oil (zero)	.01⅞	.02⅛	.01¾	.02	.01⅝	.01⅞
38-40 Straw Distillate	.02	.02¼	.01⅞	.02⅛	.01¾	.02

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Nov. 17		Nov. 10		Nov. 3	
100 vis., 2 color, 20-25 cold test	.04½	.04¾	.04½	.04¾	.04½	.04¾
100 vis., 3 color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
150 vis., 3 color, 20-25 cold test	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
150 vis., 4 color, 20-25 cold test	.06¼	.06½	.06½	.06½	.06¼	.06½
180 vis., 3 color, 23-28 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
180 vis., 4 color, 23-28 cold test	.07¾	.08¼	.07¾	.08¼	.07¾	.08¼
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
200 vis., 5 color, 23-28 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
240 vis., 3 color, 25-30 cold test	.11	.11¼	.11	.11¼	.11	.11¼
240 vis., 4 color, 25-30 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
240 vis., 5 color, 25-30 cold test	.09¾	.10	.09¾	.10	.09¾	.10
280 vis., 3 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 4 color, 25-30 cold test	.11½	.12	.11½	.12	.11½	.12
280 vis., 5 color, 25-30 cold test	.10¾	.11	.10¾	.11	.10¾	.11
Cylinder Stocks:						
600, steam refined, light green	.04½	.06	.04½	.06	.04½	.06
600, steam refined, dark green	.04	.05	.04	.05	.04	.05
190-200 vis., D color, Bright Stocks	.21	.22	.21	.22	.21	.22
150-160 vis., D color, Bright Stocks 0-10 c.t.	.19½	.20	.19½	.20	.19½	.20
150-160 vis., D color, Bright Stocks 10-25 c.t.	.19½		.19½		.19½	
150-160 vis., D color, Bright Stocks 25-40 c.t.	.19		.19		.19	
150-160 vis., E color, Bright Stocks	.18½	.19	.18½	.19	.18½	.19
Waxes:						
124-126 White Crude Scale Wax	.01⅝	.01⅞	.01⅝	.01⅞	.01⅝	.01⅞

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06½	.05½	.06½	.05½	.06½
34 Sundebloom	.05	.05½	.05	.05½	.05	.05½
36 Miners' Neutral	.05½		.05½		.05½	
150, 3 color	.17	.17½	.17	.17½	.17	.17½
180, 3 color	.19	.19½	.19	.19½	.19	.19½
200, 3 color	.21	.21½	.21½		.21½	
220, 3 color	.23½	.26½	.24	.26½	.24	.26¼
600, steam refined	.13¾		.13¾		.14	.14½
650, steam refined	.16	.17½	.16½		.17	.18
600, Pennsylvania Flash	.17	.19	.18		.18	.19
600, E filtered	.17	.17½	.17½		.18	.18½
600, D filtered, Oil City	.21	.23½	.23	.23½	.22	.23
Pennsylvania Bright Stocks below 35 c.t.	.22	.25	.24	.24½	.27	.27½
Pennsylvania Bright Stocks above 35 c.t.	.21½	.23	.23½	.24	.26½	.27
*122-124 White Crude Scale Wax	.02		.02		.02	
*124-126 White Crude Scale Wax	.02		.02		.02	

*At New York.

GULF COAST (South Texas—						
100 vis., 2-2½ color, pale oil	.05½	.05¾	.05½	.05¾	.05½	.05¾
200 vis., 3 color, pale oil	.07½	.07⅝	.07½	.07⅝	.07½	.07⅝
300 vis., 3 color, pale oil	.08¾	.08⅞	.08¾	.08⅞	.08¾	.08⅞
500 vis., 3½ color, pale oil	.09¾	.10⅛	.09⅞	.10⅜	.09⅞	.10⅛
750 vis., 3½ color, pale oil	.11⅝	.11⅞	.11⅜	.11⅞	.11⅜	.11⅞
1,200 vis., 3½ color, pale oil	.13⅛	.14⅜	.13⅞	.14⅜	.13¼	.14⅝
2,000 vis., 4 color, pale oil	.14⅞	.15⅜	.14⅞	.15⅜	.14⅞	.15⅜
200 vis., 5-6 color, red oil	.06¾	.06⅞	.06¾	.06⅞	.06⅝	.06⅞
300 vis., 5-6 color, red oil	.07⅞	.08⅜	.07⅞	.08⅜	.07½	.08⅜
500 vis., 5-6 color, red oil	.09½	.09⅝	.09½	.09⅝	.09½	.09⅝
1,200 vis., 5-6 color, red oil	.12⅞	.13⅜	.12⅞	.13⅜	.12⅞	.13⅜
2,000 vis., 6 plus color	.14⅞	.15⅜	.14⅞	.15⅜	.14⅞	.15⅜
CALIFORNIA—						
130 vis., 2½-3 color	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
200 vis., 2½-3 color	.09¼	.10¼	.09½	.10¼	.09¼	.10¼
500 vis., 3-3½ color	.10¼	.11¼	.10¼	.11¼	.10¼	.11¼
350 vis., 3½-4 color	.11¼	.12	.11¼	.12	.11¼	.12
450 vis., 3½-4 color	.12	.12¾	.12	.12¾	.12	.12¾

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

550 vis., 3½-4 color	.12¾	.13¾	.12¾	.13¾	.12¾	.13¾
Red Neutral:						
200 vis., 4½-5 color	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
300 vis., 5-6 color	.10½	.11	.10½	.11	.10½	.11
500 vis., 4½-5 color	.12¾	.13½	.12¾	.13½	.12¾	.13½
600 vis., 6½ plus color	.13½	.14¼	.13½	.14¼	.13½	.14¼
700 vis., 6½ plus color	.14½	.15¼	.14½	.15¼	.14½	.15¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) EXPORT PRICES

	Nov. 17		Nov. 10		Nov. 3	
Gaso., U.S.M., 58-60, 437 e.p., 65 O.N. (min.)	.06¼	.06½	.06		.05¼	.06¼
Gaso., U.S.M., 58-60, 437 e.p., below 65 O.N.	.06		.05½		.05¼	
Kerosene, water white, 41-43	.05½		.05½		.05	
*Fuel Oil, Bunker "C"	.70		.70		.70	
†Fuel Oil, Diesel, 28-30, per bbl.	1.40		1.40		1.40	
Gas Oil, 28 gravity plus	.04		.04		.04	
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.03½		.03½		.03½	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02⅞		.02⅞	
125-127 a.m.p., per lb.	.03		.03		.03	
130-132 a.m.p., per lb.	.03½		.03½		.03½	
133-135 a.m.p., per lb.	.04		.04		.04	
135-137 a.m.p., per lb.	.04½		.04½		.04½	
Petrolatum in barrels in carload lots, per pound:						
Dark green	.01¾		.01¾		.01¾	
Amber	.02½		.02½		.02½	
Extra amber	.03		.03		.03	
Cream	.05½		.05½		.05½	
Lily white	.06½		.06½		.06½	
Snow White	.07		.07		.07	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents a barrel.

NEW YORK (BAYONNE) REFINERY PRICES

	Nov. 17		Nov. 10		Nov. 3	
600, steam refined cylinder stocks, in bbls.	.21	.22	.21	.22	.22	.22½
635, steam refined	.22½	.23	.22½	.23	.23½	.24
650, steam refined	.24	.24½	.24	.24½	.25	.25½
600, Pennsylvania Flash	.25	.26	.25	.26	.26	.27
630, Pennsylvania Flash	.28	.29	.28	.29	.30	.31
600, Warren E	.24	.24½	.24	.24½	.25	.26
600, Oil City E	.23	.23½	.23	.23½	.24	.25
Light 140-150 Bright Stocks	.32	.33	.32	.33	.35	.36
Dark 140-150 Bright Stocks	.31	.32	.31	.32	.34	.35

LOS ANGELES EXPORT PRICES

	Nov. 17		Nov. 10		Nov. 3	
Kerosene, water white	.04	.04¾	.04	.04¾	.04	.04¾
U. S. Motor gasoline, 53-55, 437 e.p.	.04¼	.04½	.04¼	.04½	.04¼	.04½
58-60, 400 endpoint gasoline	.04¾	.05	.04¾	.05	.04¾	.05

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (Nov. 2, 1931)† ..... $ .83
Corsicana heavy (Nov. 2, 1931)* ..... .49
Other fields ..... See gravity table

†Posted by Panola Pipe Line Co., Magnolia Petroleum Co., Tidal Refining Co., Sinclair Refining Co., Gulf Pipe Line Co., Atlas Pipe Line Co. *Magnolia Petroleum Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective November 1, 1931)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) (Oct. 15, 1931) $2.00
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.70
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) 1.60
Penna Grade Oil in Buckeye Pipe Line Lines (Sept. 4, 1931) 1.50
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Nov. 9, 1931) ..... .85
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931) ..... .60
Wayne district Oil in Cumberland Pipe Lines (April 23, 1931) 1.17

Tide Water Pipe Co.
(Effective November 1, 1931)

Bradford, Pa. $2.00
Allegany, N. Y. 2.00

Pure Oil Co.
(Effective September 12, 1931)

Cabin Creek, W. Va. $1.60
Bradford Hollow, W. Va. 1.60
Kelly's Creek, W. Va. 1.60

Pennzoil Co.
(Effective October 8, 1931)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.95
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B $1.94
Includes Titusville district.
Group C $1.93
Includes Turkey and Tidioute districts.
Group D $1.92
Includes Bear Creek and Porkey districts.
Group E $1.90
Includes Eldenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties ..... See gravity table

WEST TEXAS

Iatan and Westbrook ..... Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Ector, Winkler and Pecos Counties* ..... $ .50
Lea County, N. Mex.‡ ..... .50
Toborg, Pecos County, Aug. 25, 1931†.. .25

*The Texas Company, November 2, 1931; Magnolia Petroleum Co., Humble Oil & Refining Co., Gulf Pipe Line Co., same day. †Shell Petroleum Corp. ‡Humble Oil & Refining Co., The Texas Company, November 2, 1931.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers ..... See gravity table
Jennings, La. (Nov. 2, 1931)* ..... $ .65
Lockport, La. (Aug. 27, 1931)† ..... See Gulf Coast gravity table
Refugio light ..... See gravity table
Refugio heavy (Nov. 2, 1931)‡ ..... .75
Markham (Nov. 2, 1931)§ ..... .67
High Island (Nov. 2, 1931)¶ ..... .65

*Gulf Refining Co. †Vacuum Oil Co. ‡Humble Oil & Refining. §The Texas Company. ¶Gulf Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (all grades) (Nov. 4, 1931) ..... $ .55
Urbana, Ark. ..... See note below
Bellevue, La. (June 3, 1931) ..... $ .25
Urania, La. (Nov. 2, 1931) ..... .50
Calion, Ark. (Aug. 22, 1931) ..... .52
East El Dorado, Ark. (Nov. 4, 1931) ... .55
Stephens, Ark., below 29° (August 24, 1931) ..... .41
Stephens, Ark., 29° and above (August 24, 1931) ..... .44
Other fields ..... See gravity table

Note—Smackover, all grades, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co. Bellevue posted by Magnolia Petroleum Co.; Urania by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; Calion by Gulf Refining Co.; East El Dorado by Gulf Refining Co.

(Continued on Page 94)

CRUDE OIL GRAVITY TABLE

	Kansas and Oklahoma 1	North and Central Texas 2	East Central Texas 3	Gray County, Texas 4	Carson and Hutchinson Counties, Texas 5	Salt Creek, Wyoming 6	North Louisiana and Arkansas 7	Gulf Coast (Tex. and La.) 8
Below 25 degrees	...	...	...	...	...	...	...	$ .70
25-25.9 degrees	...	...	...	...	...	...	...	.71
26-26.9 degrees	...	...	...	...	...	...	...	.72
27-27.9 degrees	...	...	...	...	...	...	...	.73
28-28.9 degrees	...	...	...	...	...	...	...	.74
Below 29 degrees	$ .61	$ .61	$ .61	...	...	$ .61	$ .61	...
29-29.9 degrees	.63	.63	.63	...	...	.63	.63	.75
30-30.9 degrees	.65	.65	.65	...	...	.65	.65	.76
31-31.9 degrees	.67	.67	.67	...	...	.67	.67	.77
32-32.9 degrees	.69	.69	.69	...	...	.69	.69	.78
33-33.9 degrees	.71	.71	.71	...	...	.71	.71	.79
34-34.9 degrees	.73	.73	.73	$ .61	$ .56	.73	.73	.80
35-35.9 degrees	.75	.75	.75	.63	.58	.75	.75	.81
36-36.9 degrees	.77	.77	.77	.65	.60	.77	.77	.82
37-37.9 degrees	.79	.79	.79	.67	.62	.79	.79	.83
38-38.9 degrees	.81	.81	.81	.69	.64	.79	.79	.84
39-39.9 degrees	.83	.83	.83	.71	.66	.79	.79	.85
40 degrees and over	.85	.85	.85	.73	.68	.79	.79	.86

The Magnolia Petroleum Co., which pays a flat price in every field in which it purchases oil, posted the following price notice: "Effective November 2, 1931, at 7 a.m. and until further notice our prices on crude oil will be as follows at the wells: North and North Central Texas, which includes only Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden, 83 cents; Central Texas, which includes only Mexia, Wortham, Corsicana light, Panola County and Lytton Springs, 79 cents; East Texas district, 83 cents; West Texas, which includes Winkler, Crane, Upton, Howard, Glasscock and Mitchell Counties, 50 cents; Panhandle district of Texas: Gray County, 73 cents; Carson and Hutchinson Counties, 66 cents; Southwest Texas: Mirando, 75 cents; Darst Creek, 60 cents; Corsicana heavy and Luling, 49 cents. Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka, Seminole, 83 cents; Cement, Duncan and Walters, 75 cents; Hewitt and Graham, 67 cents; Healdton, 52 cents.

The Magnolia Petroleum Co. made the following announcement applying to North Louisiana and Arkansas: "Effective November 4, 1931, at 7 a.m., and until further notice our prices on crude oil in the States of Louisiana and Arkansas will be as follows per barrel at the wells: Louisiana—Bull Bayou, 83 cents; Haynesville, 65 cents; Pine Island, 73 cents; Cotton Valley, 61 cents. Arkansas—El Dorado, 63 cents; Rainbow, 63 cents; El Dorado East Field, 55 cents; Smackover, 55 cents.

The White Eagle Oil Corp., effective November 2, posted the following prices in Kansas: Group 1—Eastborough, Wright, Robbins, Greenwich, Lorena and North Greenwood Pools, 85 cents; Group 2—Eastman, Fox-Bush and Keighly, 83 cents; Group 3—Smock, Sluss, Leon-Weaver, Peabody and Rock, 81 cents; Group 3A—Ritz-Canton, 79 cents; Group 4—Urschell, Florence, Elbing, Nuttle-Koogler, 77 cents; Augusta, 77 cents; Group 5—Gelwick, 61 cents.

Column 1—Led by Continental Oil Co., effective November 2, and adopted by other purchasers on same day, excepting that the Carter Oil Co., Gypsy Oil Co. and Pure Oil Co. started their schedule at below 25 degrees, 53 cents; 25 degrees, 55 cents, with 2 cents added for each degree upward to 40 degrees and above at 85 cents.

Column 2—Led by Continental Oil Co., effective November 2, and followed on same day by other purchasers.

Column 3—Led by Humble Oil & Refining Co., effective November 2.

Column 4—Led by The Texas Company, November 2, followed by Humble Oil & Refining Co., Gulf Pipe Line Co. and H. F. Wilcox Oil & Gas Co. same day.

Column 5—Led by The Texas Company, November 2, followed on same day by Humble Oil & Refining Co. and Gulf Pipe Line Co.

Column 6—Mid West Refining Co., November 2.

Column 7—Standard Oil Co. of Louisiana, November 4, 1931; The Texas Company, Gulf Refining Co. and Louisiana Oil Refining Co. same day.

Column 8—Led by The Texas Company, followed on same day by Humble Oil & Refining Co., Vacuum Oil Co., Gulf Pipe Line Co. and Sun Oil Co., but two last named companies' schedules stop at 35 degrees and above at 81 cents, and the Sinclair Refining Co., but latter company's schedule stops at 31 degrees and above at 71 cents.

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO. OF CALIFORNIA

For its current purchases of crude oil at the well (unless otherwise specified) the allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee. All gravities above those quoted take highest price offered in that field. Effective June 19, 1931, at 7 a.m.

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea Canon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills
14-14.9	$ .65	$ .65	$ .65	$ .65	$ .65	$ .65	$ .65	$ .65	...	$ .55	$ .55
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
20-20.9	.65	.65	.65	.66	.66	.65	.65	.65	...	.55	.55
21-21.9	.65	.65	.65	.68	.67	.65	.66	.65	...	.55	.57
22-22.9	.65	.65	.66	.70	.68	.66	.68	.65	...	.56	.59
23-23.9	.67	.67	.68	.72	.70	.67	.70	.66	...	.58	.60
24-24.9	.69	.69	.70	.74	.72	.68	.72	.67	$ .65	.61	.62
25-25.9	.71	.71	.72	.76	.74	.70	.74	.69	.65	.64	.64
26-26.9	.73	.73	.74	...	.76	...	...	.71	.65	.66	.66
27-27.9	.75	.75	.76	...	.78	...	...	.73	.68	.68	.67
28-28.9	.77	...	...	...	.80	...	...	.75	.71	.71	.69
29-29.9	.79	...	...	...	...	...	...	.77	.73	.74	.71
30-30.9	.81	...	...	...	...	...	...	.79	.75	.76	.73
31-31.9	...	...	...	...	...	...	...	...	.78	...	...
32-32.9	...	...	...	...	...	...	...	...	.80	...	...
33-33.9	...	...	...	...	...	...	...	...	.83	...	...
34-34.9	...	...	...	...	...	...	...	...	.85	...	...
35-35.9	...	...	...	...	...	...	...	...	.87	...	...

Standard Oil Co. of California prices in other fields:

Wheeler Ridge—55 cents per barrel for all grades (14° to 25.9°).

Coalinga—55 cents for all grades from 14° to 24-24.9°; 57 cents for 25 gravity.

Newhall, McKittrick and Kern River—55 cents for all grades (14° to 19.9°).

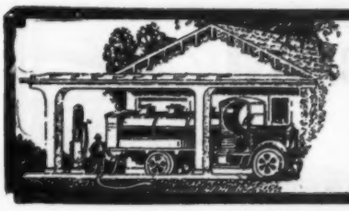
Montebello—65 cents for all grades (14° to 25.9°).

Whittier and LaHabra—65 cents for all grades (14° to 22.9°).

Elwood Terrace, f.o.b. ship—32° to 33.9°, 79 cents; 34° to 34.9°, 81 cents; 35° to 35.9°, 84 cents; 36° and above, 87 cents.

Playa Del Rey—Prices subject to field gathering charge of 5 cents per barrel—19° to 19.9°, 65 cents; 20° to 20.9°, 65 cents; 21° to 21.9°, 66 cents; 22° to 22.9°, 67 cents; 23° to 23.9°, 68 cents; 24° to 24.9°, 67 cents; 25° and above, 68 cents.

(Continued on Page 102)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Nov. 17

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago	15.0	15.6	3.0	9.0
Decatur, Ill.	15.4	15.4	3.0	9.0
E. St. Louis	14.7	14.7	3.0	8.2
Joliet	15.4	15.4	3.0	9.0
Peoria	15.4	15.4	3.0	9.0
Quincy	15.2	15.2	3.0	8.8
Davenport, Ia.	15.5	15.5	3.0	9.3
Des Moines	14.4	14.4	3.0	8.0
Keokuk	15.5	15.5	3.0	6.3
Sioux City	15.1	15.1	3.0	8.9
Duluth, Minn.	16.5	16.5	3.0	9.9
Mankato	16.1	16.1	3.0	8.0
Minneapolis	14.4	14.4	3.0	9.9
La Cross, Wis.	17.2	17.2	4.0	10.9
Milwaukee	16.1	16.1	4.0	8.9
Madison	16.3	16.3	4.0	9.1
Detroit, Mich.	14.5	14.5	3.0	10.7
Grand Rapids	15.7	15.7	3.0	10.6
Saginaw	15.9	15.9	3.0	10.8
Evansville, Ind.	16.1	16.1	4.0	9.9
Indianapolis	16.3	16.3	4.0	10.1
South Bend	16.4	16.4	4.0	8.0
Fargo, N. D.	17.9	17.9	3.0	11.9
Huron, S. D.	17.3	17.3	4.0	10.7
Sioux Falls	16.8	16.8	4.0	10.4
K. C., Mo.	14.9	14.9	3.0	7.6
Springfield*	14.9	14.9	3.0	8.5
St. Louis*	13.4	13.4	2.5	8.3
St. Joseph	10.4	10.4	3.0	7.5
Wichita, Kans.	13.8	13.8	3.0	7.9
Bartlesville, Ok.	14.0	16.0	5.0	7.0

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 1½ cents or more below the price on the regular grade.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective April 15—Discounts on Q.D.A. on 1,000 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	15.0	4.0	9.0
Fort Worth	14.0	15.0	4.0	7.0
Houston	13.0	15.0	4.0	8.0
San Antonio	13.0	15.0	4.0	7.0
El Paso	15.0	17.0	4.0	10.0
Texarkana	13.0	15.0	4.0	8.0
Muskogee, Okla.	10.0	12.0	5.0	8.0
Okla. City	14.0	16.0	5.0	7.0
Tulsa	14.0	16.0	5.0	8.0
Ft. Smith, Ark.	*16.5	17.0	5.0	*11.0
Little Rock	*17.5	17.0	6.0	*11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2 cents to dealers.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	14.0	17.0	4.0	12.5
Pueblo	13.0	15.0	4.0	13.0
Grand Jctn.	18.0	21.0	4.0	14.5
Casper, Wyo.	16.0	18.0	4.0	10.0
Cheyenne	†15.0	15.0	4.0	11.5
Butte, Mont.	18.0	21.0	5.0	16.0
Billings	20.0	23.0	5.0	14.5
Great Falls	21.0	23.0	5.0	16.0
Helena	21.0	23.0	5.0	16.0
Salt Lake, Utah	17.5	20.5	4.0	16.0
Albu'que, N. M.	18.0	21.0	6.0	14.0
Boise, Idaho	20.5	23.5	5.0	18.0
Twin Falls*	20.5	21.0	5.0	18.0

*2½-cent discount off tank wagon to dealers.

†3-cent discount off tank wagon to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points	15.0	16.0	4.0	*12.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	14.9	15.9	4.0	9.25
McCook	17.0	17.0	4.0	7.5
Norfolk	16.75	17.75	4.0	9.75
N. Platte	17.75	18.75	4.0	10.50
Scottsbluff	17.0	17.0	4.0	9.0

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

PACIFIC COAST TERRITORY

	Gasoline			Kero.
	Wh'le's price	Retail* price	Incl'ds tax of	tank wagon
Fresno	19.5	16.5	3.0	17.0
San Francisco	19.5	16.5	3.0	15.5
Los Angeles	19.0	16.0	3.0	15.5
Reno, Nev.	23.5	20.5	4.0	19.0
Portland, Ore.	21.0	18.0	4.0	16.5
Seattle, Wash.	22.0	19.0	5.0	16.5
Tacoma	22.0	19.0	5.0	16.5
Spokane	25.5	22.5	5.0	20.5
Phoenix, Ariz.	15.5	16.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 3 cents plus a 2-cent special temporary discount subject to withdrawal at any time.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	*11.0	*12.0	...	11.0
Philadelphia	*10.0	*11.0	...	11.0
Scranton	*10.0	*11.0	...	11.0
Allentown	*10.0	*11.0	...	11.0
Altoona	*11.0	*12.0	...	11.0
Erie	*11.0	*12.0	...	11.0
Dover, Del.	14.0	15.0	3.0	11.0
Wilmington	14.0	15.0	3.0	11.0
Springfd, Mass.	13.0	14.0	3.0	10.0
Worcester	14.3	15.3	3.0	10.0
Boston	13.5	14.5	3.0	10.0
Providence, R.I.	11.3	13.1	2.0	10.0
Hartford, Conn.	13.0	14.0	2.0	10.0
New Haven	14.6	15.6	2.0	10.0

*Does not include tax of 3 cents in Pennsylvania. †Pennsylvania tax is collected by the dealer and paid by him direct to the State. The above prices are subject to discounts to the dealers and to commercial accounts under contract for one year in accordance with Code of Ethics.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.	14.5	14.5	6.0	12.0
Baton Rouge	16.5	17.0	5.0	13.0
Alexandria†	15.5	15.5	6.0	13.0
Lafayette*	17.5	18.0	6.0	12.0
Lake Charles*	14.0	14.0	6.0	12.0
Shreveport	16.5	17.0	5.0	12.0
Knoxville, Tenn.	20.0	20.5	6.0	13.5
Memphis	16.0	16.0	6.0	10.0
Chattanooga	19.5	20.0	6.0	12.0
Nashville	19.0	19.5	6.0	12.5
Bristol	18.0	19.0	6.0	14.0
Lt. Rock, Ark.	17.5	18.0	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	16.6	17.6	2.0	15.6
New York*	15.3	15.3	2.0	14.3
Buffalo	15.8	15.8	2.0	14.8
Rochester	16.0	16.0	2.0	14.0
Syracuse	16.8	16.8	2.0	14.8
Boston, Mass.	16.5	16.5	3.0	13.5
Augusta, Me.	18.8	18.8	4.0	14.8
Manch'tr, N. H.	18.4	18.4	4.0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N.J.	14.7	15.7	3.0	11.5
Newark	13.7	14.7	3.0	10.5
Annapolis, Md.	15.2	16.2	4.0	11.0
Baltimore	14.4	15.4	4.0	8.5
Cumberland	16.2	17.2	4.0	12.0
Wash'ton, D. C.	12.9	13.9	2.0	10.7
Danville, Va.	17.0	18.0	5.0	11.8
Norfolk	15.5	16.5	5.0	10.3
Petersburg	16.5	17.5	5.0	11.3
Richmond	15.9	14.9	5.0	10.7
Roanoke	17.2	17.2	5.0	12.0
Charles'n, W.Va.	15.7	16.7	4.0	11.5
Keyser	16.8	17.3	4.0	12.1
Parkersburg	14.4	15.4	4.0	10.2
Wheeling	15.6	16.6	4.0	11.4
Charlotte, N. C.	16.5	17.5	6.0	10.7
Hickory	18.8	19.8	6.0	13.6
Mount Airy	18.7	19.7	6.0	13.5
Raleigh	18.4	19.4	6.0	12.2
Salisbury	18.7	19.7	6.0	12.5
Charleston, S.C.	16.5	17.5	6.0	10.3
Columbia	18.4	19.4	6.0	13.2
Spartanburg	18.7	19.7	6.0	12.5

Two cents per gallon discount off retail tank wagon price of gasoline to dealers except Washington, D. C., and State of Maryland and New Jersey, where discount is 3 cents.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.*	17.5	17.5	6.0	13.5
Augusta	19.0	20.0	6.0	14.0
Macon	19.0	19.0	6.0	13.0
Savannah	17.0	17.0	6.0	13.0
Birm'ham, Ala.	15.5	15.5	6.0	13.0
Mobile	17.5	17.5	5.0	10.0
Montgomery	20.0	20.0	6.0	13.5
Jackson	16.0	16.0	5.5	11.5
Jack'ville, Fla.	19.0	19.0	7.0	12.0
Miami	19.0	20.0	7.0	13.0
Pensacola	20.0	21.0	7.0	13.0
Tampa	19.0	19.0	7.0	12.0
Lexington, Ky.	17.0	18.0	5.0	12.0
Covington	17.0	18.0	5.0	11.0
Louisville	15.0	16.0	5.0	10.0
Corbin	18.0	19.0	5.0	15.0

A third grade "Kyso Green," is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 3 cents. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 2 price to dealers 2 cents under posted tank wagon price.

*An additional discount of 1 cent is offered to dealers here effective October 6.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	11.7	6.0
V.M.P. naphtha	13.7	7.5
Cleaners' naphtha	15.2	9.0
Stanisol	15.3	9.0

Tank wagon prices f.o.b. Chicago and Whiting, effective Nov. 6.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.o.b. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more, 6 cents.

Stanolex Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 3.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 38-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

TANK WAGON CHANGES

Standard Oil Co. of Indiana advanced the gasoline station price in Davenport, Iowa, to 15.5 cents November 12.

Standard Oil Co. of New Jersey reduced the gasoline tank wagon and station prices in Roanoke, Va., to 17.2 cents each November 7 and on November 11 to 16.5 cents and 17.5 cents in Charlotte, N. C.

Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices in Bristol, Tenn., to 18 cents and

(Continued on Page 104)

CRUDE OIL PRICES

(Continued from Page 93)

and Magnolia Petroleum Co.; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Nov. 2, 1931)‡	$ .60
Luling (Nov. 2, 1931)†	.49
Mirando (Nov. 2, 1931)†	.75
Pettus (Nov. 2, 1931)*	.85
Salt Flat (Nov. 2, 1931)*	.60
Thrall§	
Lytton Springs (Lockhart). See gravity table	
Dobrowolski§	
Same as Mid-Continent gravity scale up to and including 38-38.9°.	
Somerset¶	
Same as Mid-Continent gravity scale up to and including 38-38.9°.	

‡The Texas Company. *Humble Oil & Refining Co. †Magnolia Petroleum Co. §Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.

Iles, light (Aug. 24, 1931)	$ .75
Iles, heavy (Aug. 24, 1931)	.53
Fort Collins (Nov. 3, 1931)	.71
Florence (Nov. 2, 1931)	.65
Wellington (Nov. 3, 1931)	.61
Dutton Creek (Nov. 3, 1931)	.75
Rock Creek, Wyo. (Nov. 3, 1931)	.85
Frannie, light (Nov. 3, 1931)	.61
Frannie, heavy (Nov. 3, 1931)	.51
Salt Creek. Mid-Continent gravity table	
Big Muddy (Nov. 3, 1931)	.83
Grass Creek (Nov. 3, 1931)	1.05
Elk Basin (Nov. 3, 1931)	1.05
Lance Creek (Aug. 24, 1931)	1.05
Poison Spider (Mar. 5, 1931)	.70
Notches (Mar. 14, 1927)	.65
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Apr. 15, 1931)	.93
Lost Soldier (Nov. 3, 1931)	.69
Hamilton Dome (Nov. 3, 1931)	.45
Greybull (Nov. 3, 1931)	1.05
Cat Creek (Nov. 3, 1931)	1.05
Pondera (Nov. 3, 1931)	.90
Sunburst, Mont. (Nov. 3, 1931)	1.00
Hogback, N. Mex. (Aug. 24, 1931)	.80
Lea County, N. Mex. (Nov. 3, 1931)	.50
Border, Mont.	1.55
Red Coulee, Alberta	1.55
Dry Creek, Mont. (Aug. 24, 1931)	1.00
Maljamar (Aug. 22, 1931)	1.00
Artesia-Jackson (Nov. 3, 1931)	.50

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin, Lost Soldier posted by Producers and Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by the Continental Oil Co. Osage posted by Arro Oil & Refining Co.

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective November 3, 1931)

Lima	$1.00
Wooster	1.15
Illinois	.95
Indiana	.60
Princeton	.95
Plymouth	Shut in
Western Kentucky	.90
Midland, Mich. (Oct. 9, 1931)*	.55
Dundee, Mich.†	
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich.†	
....Same as Mid-Continent gravity scale	
Somerset, Ky. (Nov. 4, 1931)	.80
Hart County, Ky. (Nov. 1, 1931)‖	.60

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‖Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining, Ashland, Ky., and delivered through its own pipe line.

MEXICO

Panuco*	$ .45

*F.o.b. ship, based on October transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Nov. 3, 1931):	
Petrolia*	$1.90
Oil Springs*	1.97
Alberta (Aug. 24, 1931):	
Turner Valley:†	
Crude oil 45-45.9	2.08
Crude oil 50 and above	2.65
Crude naphtha	3.13
Discolored naphtha	2.88

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Of Interest to Sales Departments

CONSOLIDATE FLEET OF STANDARD AND VACUUM

NEW YORK, Nov. 14.—The Standard-Vacuum Transport Co. has been formed by Socony-Vacuum Corp. as the operating subsidiary to take over the tanker fleets of the old Vacuum Oil Co. and Standard Oil Co. of New York. Consolidation of the shipping facilities of the two companies marks the first step in the domestic unification of operations and is expected to effect operating economies, as well as make for greater efficiency in marine transportation of products handled by the two companies.

Frederick S. Fales, a director of the parent company and president of the old Standard Transportation Co., shipping subsidiary of the Standard Oil Co. of New York, heads the new shipping company, which has the same officers as Standard Transportation. The next step in the integration of the operations of the two companies, it is expected, will be a consolidation of the crude oil producing properties of Socony and Vacuum, with Magnolia Petroleum Co. to be the operating company for all properties with the exception of California holdings, which are expected to be operated by General Petroleum Co., a Socony subsidiary. It is contemplated that eventually, however, all crude producing operations will come under the control of Magnolia, according to reports here.

Pipe line activities of the merged companies will be unified later on, with an operating subsidiary to be formed for the purpose.

The most important step in connection with the recent merger, that of consolidating the marketing operations of Socony and Vacuum, is now in process of consideration, but it is expected that in view of the magnitude which this problem presents that it will be some time before a satisfactory arrangement for merging these operations into one unit will be arrived at, although there is a possibility that two marketing organizations may be continued to take full advantage of the good will enjoyed by both companies. While there is duplication between the marketing operations of Socony and Vacuum in some cases, this is not extensive, and it is considered likely that some readjustments in marketing operations may be evolved without the actual consolidating of all marketing operations into one organization.

GERMANY INCREASING USE SOVIET GASOLINE

Germany is purchasing an increasing volume of Russian gasoline at the expense of American refiners. While Germany used less gasoline during 1931 than it did in 1930, the increase since 1927 is plainly shown in the following table which in turn indicates the rapid increase in the use of motor vehicles in that country. Following is a comparison of the volume of gasoline imported during 1927, 1930 and 1931 expressed in tons as received from the important refining countries:

	1931	1930	1927
United States	411	557	256
Russia	176	133	37
Rumania	109	151	71
Persia	99	85	51
Total	948	1,133	504

A price fixing agreement between the largest gasoline trading companies, including the Russians, exists only for official prices on small quantities; sale of larger quantities is through special rebates. Success of the Russian exporters is due partly to the erection of more filling stations and to increased advertising.

INSTITUTE PREPARES TO FIGHT EVASIONS OF GASOLINE TAXES

By R. C. Conine

CHICAGO, Nov. 12.—Attention at the American Petroleum Institute sessions of the marketers held this week was practically monopolized by the problems of gasoline tax evasion and its kindred, mounting gasoline tax levies. The gasoline tax has been raised by the states from those figures which assured the maximum of highway construction and maintenance, to ridiculous amounts which are diverted to a variety of purposes entirely outside of the principle upon which such taxation was originally based and justified. At the closing session of the board of directors of the American Petroleum Institute the following resolution was adopted:

"Whereas, the sole reason for an excise tax upon gasoline is the use of funds so derived for the construction and maintenance of adequate highways; and whereas, for a period of almost 10 years such excise has been levied and collected by the states of the United States generally, and has, through the extravagance and recklessness of public officials, continually increased until it has reached the astounding aggregate sum of more than $500,000,000 per annum, and more per gallon of gasoline than the present wholesale price thereof;

"And, whereas, the original purpose of such excise has been accomplished to such an extent that such tax is no longer necessary or justifiable for highway construction or maintenance, but there is a steadily increasing effort to continue such tax in effect and even to increase the same, diverting the proceeds to purposes entirely disconnected from the use of gasoline or the benefit of the users, as distinguished from any other commodity or its users;

"And, whereas, gasoline is a necessity, not a luxury, and the enormous rate of tax thereon prevents the industry from obtaining a reasonable price for the product and is responsible for nation-wide efforts to evade payment of the tax, which evasion and demoralization of the market is certain to continue unless the rate of taxation is materially and immediately reduced, defeating the purpose of the tax and jeopardizing the invested capital of the petroleum industry;

"And, whereas, if revenue for other purposes than highway construction and maintenance is to be raised by excise tax upon commodities, no reason exists that gasoline should bear the burden while other commodities remain free therefrom;

"Now, therefore, be it resolved, that the American Petroleum Institute, as the representative of the petroleum industry in the United States, make as one of its major activities an effort to impress upon the public officials the necessity for an immediate decrease in the rate of taxation and for the strict application of the proceeds of such decreased taxation to the construction and use of highways alone.

"Be it further resolved, that the institute set up such organization and personnel as it may require vigorously to prosecute a campaign to prevent increases and procure decreases, in gasoline tax, such activity to be financed by the solicitation of an initial fund of $100,000 from the membership of the American Petroleum Institute in fair and equitable proportion to their activities in all branches of the industry, such fund to be budgeted for said purpose alone and handled and disbursed through the regular channels of the institute.

Appoint Committees

The divisions of refining and marketing elected the following 20 members, each, for their respective general committees. President Amos L. Beaty named five additional members to each division. Division of marketing, general committee:

W. T. Atkins, Skelly Oil Co.; J. W. Carnes, Sinclair Refining Co.; H. D. Collier, Standard Oil Co. of California; S. B. Eckert, Sun Oil Co.; M. G. Eitelman, Barnsdall Refining Co.; Frederick Ewing, Standard Oil Co. of New York; Allan Jackson, Standard Oil Co. of Indiana; H. D. Frueauff, Cities Service Co.; C. N. Humphrey, Standard Oil Co. of Nebraska; V. H. Kelly, Union Oil Co. of California; R. D. Leonard, Atlantic Refining Co.; R. W. McDowell, Mid-Continent Petroleum Corp.; W. S. S. Rodgers, The Texas Company; E. L. Shea, Tide Water Associated Oil Co.; C. G. Sheffield, Standard Oil Co. of New Jersey; C. S. Smith, National Refining Co.; H. A. Trower, Phillips Petroleum Co.; W. G. Violette, Standard Oil Co. of Kentucky; L. S. Wescoat, Pure Oil Co.; A. C. Woodman, Richfield Oil Corp. of New York; and appointed by president: H. B. Earhart, White Star Refining Co.; W. H. Ferguson, Continental Oil Co.; E. T. Moore, Simms Oil Co.; G. R. Nutty, Gulf Refining Co.; and J. C. Van Eck, Shell Union Oil Corp.

Division of refining, general committee: Lloyd F. Bayer, Associated Oil Co.; Howard Bennette, Western Petroleum Refiners Association; C. B. Buerger, Gulf Refining Co.; E. M. Clark, Standard Oil Development Co.; L. R. Crawford, Producers & Refiners Corp.; Fayette B. Dow, National Petroleum Association; C. W. Hadley, Vacuum Oil Co.; J. S. Harrison, Standard Oil Co. of Ohio; F. E. Holsten, Barnsdall Refineries, Inc.; A. S. Hopkins, Standard Oil Co. of Kansas; R. E. Humphreys, Standard Oil Co. of Indiana; E. W. Isom, Sinclair Refining Co.; G. Leigh-Jones, Shell Oil Co.; E. M. Lyons, Tiona Refining Co.; K. G. Mackenzie, The Texas Company; Walter Miller, Continental Oil Co.; F. E. Rice, Phillips Petroleum Co.; W. L. Stewart, Jr., Union Oil Co. of California; C. B. Watson, Pure Oil Co., and appointed by the president: John L. Gray, Deep Rock Oil Corp.; William Irish, Atlantic Refining Co.; K. R. Kingsbury, Standard Oil Co. of California; P. M. Miskell, Empire Oil

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CANADA FIXES NEW DUTY ON GASOLINE IMPORTED

CHATHAM, Ontario, Nov. 14.—An official statement from Ottawa announces a change in values for duty purposes on refined gasoline from certain points in the United States as fixed by the minister of national revenue, Hon. E. C. Ryckman. Fluctuations in the price of gasoline in the United States influences such changes from time to time.

As from November 8, appraisal will be made per wine gallon at the following rates: Pennsylvania, New York and district, which includes Atlantic Seaboard, 7.72 cents; Toledo, Detroit, Cleveland and district, 8.333 cents; Chicago and district, 7.233 cents; Minneapolis and district, 7.583 cents; Wood River, St. Louis and district, 6.833 cents; Mid-Continent district, which includes the states of Oklahoma, Kansas, part of Missouri, part of Arkansas and North Texas, 5.083 cents; South Texas and Louisiana and district, 6.633 cents; Wyoming and district, 5.083 cents; Montana and district, 8.083 cents.

NEW FILMS ON REFINING AND ALLIED SUBJECTS

Additional films for use of various organizations in showing the story of refining and its allied industries are now available from the Pittsburgh experimental station of the U. S. Bureau of Mines at Pittsburgh, Pa. These have been prepared by taking views in practically every large refinery in the country and deal with all phases of manufacturing. Any of the following films may be secured from the experimental station for showing by clubs, schools, churches, etc., by paying transportation charges.

"The Story of Gasoline." Reel 1 contans data on annual consumption of gasoline in United States, panoramic views of oil fields, storage tanks and pumping stations. It presents a map of pipe lines of United States; shows percentages of naphtha, kerosene, gas oil, lubricating oils, fixed gas, and coke per barrel of crude oil; pictures by photographs and animated drawings how these products are obtained; and concludes with steps in manufacture and refining of gasoline. Reel 2 depicts additional treatment of gasoline to prepare it for commercial use; shows cracking process in detail by animated drawings; picture tests to determine whether finished product meets specifications; and gives steps in transportation of gasoline from refinery to consumer.

"The Story of Lubricating Oil." Reel 1 stresses importance of lubrication to machinery; shows stills used in separating various products from crude oil; explains theory of operation of still by animated drawings; pictures treatment of crude lubricating oil to remove impurities; shows removal of paraffin wax, which would be a harmful constituent; and illustrates separation of oil into various grades in reducing stills, followed by filtration. Reel 2 follows bottom stock remaining after distillation of crude oil through treatment with chemicals to take out impurities, separation of petrolatum by centrifuges, and blending of various grades and types of oils to make lubricants for every purpose; also shows flash and viscosity tests in laboratory and application of correct lubricants to automobile, airplane and Diesel engines.

"Automobile Lubrication." The early scenes of the film show an automobile owner driving into a modern greasing station, where the offer is made to explain the various operations involved in a complete lubrication job. The used oil is drained for two reasons, it is explained. The crankcase is cleaned with flushing oil which removes deposits and dirt from the oil lines, pockets and other points where they have collected.

Other films have been prepared, including "The Story of the Storage Battery," "The Gasoline Motor," one showing the heat treatment of steel, another the making and use of the spark plug, another on the use of gasoline powered machinery and still another on safety measures when operating the motor of the car in a garage while the individual is exposed to carbon monoxide.

NEW YORK SALES INCREASE

NEW YORK, Nov. 16.—Sales of gasoline in New York state during August aggregated 169,019,374 gallons, an increase of 11,389,929 gallons over the sales for the comparable month last year, according to the report of the commissioner of taxation and finance.

Sales of taxable motor fuel during the month were 165,249,140 gallons, against 165,166,531 gallons in the previous month and 154,243,769 gallons in August, 1930.

Oil Stocks Await Further Developments

Technical Recession Follows Rise Based on Crude Price Increases. Tide Water Reports $1,253,175 Net for Third Quarter

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Nov. 16.—The oil securities market lost considerable of its recent momentum and underwent a slight technical recession during the week following the recent upward surge reflecting price increases in crude during the early part of the month. Notwithstanding the easing off in selling prices, however, current values continue well above the lows for the year.

Market sentiment regarding the oils is slowly turning to the bullish side, and operators look for a further upward movement. Some talk is heard in financial circles regarding the probability of a further boost in crude oil price schedules, and the improved earning position of the industry as a whole now that inventories have been written off is also a constructive factor marketwise.

According to reports in some quarters of the market, there is strong likelihood that the oils, as a group, will shortly come in for substantial pool support. During the record bull market which culminated in the disastrous crash late in 1929, the oils were generally neglected by the professional element and did not participate as extensively as rails, industrials and other groups in the upward move.

Tide Water Dividend

Tide Water Oil Co. has declared the regular quarterly dividend of $1.50 per share on the preferred, payable December 1 to stock of record November 13.

Tide Water Associated

Tide Water Associated Oil Co. and subsidiaries report for the quarter ended September 30 net earnings of $1,253,175 after interest, depreciation, depletion, interest and other charges, but before preferred dividends, compared with net loss of $885,889 before preferred dividends in the previous quarter. Net earnings for the first nine months of the year were $175,710 against $7,886,522 in the corresponding period of 1930.

Tide Water Oil Co., a subsidiary, reports profit of $529,619 for the third quarter after charges, against net loss of $863,227 in the previous quarter. Net loss for the first nine months of 1931 was $1,478,952 against net profit of $3,988,263 in the comparable period last year.

Associated Oil Co., Pacific Coast subsidiary, reports earnings of $747,746 for the September quarter, compared with net of $42,064 in the previous quarter. Profit of Associated for the first nine months of the year was $1,859,054, against $4,596,561 in the corresponding months last year.

Standard of Kansas

Standard Oil Co. of Kansas reports for the September quarter net profit of $197,203 after charges, equivalent to 61 cents per share on the 320,000 shares outstanding. Net loss of Standard of Kansas for the first nine months was $733,254, after all charges and provision for inventory readjustment.

Standard of Nebraska

Standard Oil Co. of Nebraska has declared the regular quarterly dividend of 50 cents per share, payable December 21 to stock of record November 27.

Union Tank Car

Union Tank Car Corp. has declared the regular quarterly dividend of 40 cents per share, payable December 1 to stock of record November 16.

Ohio Oil

Ohio Oil Co. has declared the regular quarterly dividend of $1.50 per share on the preferred, payable December 15 to stock of record November 21.

Derby Oil

Derby Oil & Refining Corp. reports for the nine months ended September 30 net profit, after expenses, depreciation, and depletion of $22,510, equal to $1.08 a share on 20,807 shares of $4 preferred stock. This compares with $540,361, equivalent to $1.81 per share on the common, after preferred dividends, for the corresponding months last year.

British-American Oil

British American Oil Co. has declared a dividend of 20 cents per share, payable January 2.

Standard of Indiana

Approval of their company's participation in the financing of the National Corn Credit Corp., undertaking to expand by $10,000,000 the credit available to corn growers, has been given by the board of directors of Standard Oil Co. of Indiana.

Peoples Gas Light

Considerable improvement in the financial position of Peoples Gas Light & Coke Co. is shown in the balance sheet as of September 30, 1931. Current assets were listed at $19,431,715, while current liabilities amounted to $11,587,441, compared with $21,660,766 current assets and $15,243,375 current liabilities on December 31, 1930. Total assets were shown at $237,165,751, against $211,070,586. Profit and loss surplus was $29,028,352, as against $28,751,444 at the close of 1930.

Indian Refining

At annual meeting of Indian Refining Co., controlled by The Texas Corporation, stockholders approved reduction in authorized common stock to 1,275,000 shares from 2,000,000. Directors were re-elected.

Atlantic Refining

Atlantic Refining Co. has declared the regular quarterly dividend of 25 cents on the common stock, payable December 15 to stock of record November 21.

Houston Oil

Houston Oil Co. of Texas and Houston Pipe Line Co. report for the September quarter consolidated net loss of $410,718 after interest, depreciation, depletion, abandoned leases and federal taxes, as compared with net income of $233,509 in the previous quarter and net income of $292,625 in the September quarter last year.

Prairie Oil & Gas

Prairie Oil & Gas Co. reports for the September quarter net profit of $342,000 against $1,315,300 in the previous quarter and $3,491,150 in the September quarter last year.

Barnsdall Oil

Barnsdall Corp. and subsidiaries report for nine months ended September 30, 1931, net loss of $2,538,551 after interest, taxes, depreciation, depletion, intangible development costs, minority interests, etc. This compares with net profit in first nine months of 1930 of $4,710,607, equal to $2.08 a share (par $25) on 2,257,635 combined Class A and Class B shares.

For quarter ended September 30, 1931, net loss was $723,053 after taxes and all charges, comparing with net loss of $1,828,925 in preceding quarter and net profit of $1,343,167, equal to 59 cents a share on combined Class A and Class B shares in September quarter of 1930.

Continental Oil

Continental Oil Co. of Delaware and subsidiaries report for the first nine months of 1931 net loss of $9,484,163 after all charges, against net earnings before taxes of $4,002,794 in the corresponding months last year. Net loss for the September quarter was $2,955,322, against loss of $4,037,698 in the previous quarter and net profit before taxes of $1,358,974 in the third quarter of 1930.

Standard of California

Standard Oil Co. of California reports for the September quarter net income of $6,297,819 after depreciation, depletion, amortization, federal taxes and inventory adjustment, as compared with $1,275,358 net in the previous quarter and net income of $10,717,039 in the third quarter last year. Net earnings for the first nine months of 1931 were $11,941,787 after charges and inventory adjustment, equivalent to 91 cents per share, against $30,435,563 earned in the corresponding months of 1930.

Cumberland Pipe Line

A letter to stockholders of Cumberland Pipe Line Co. announces that with the sale of its properties completed, the company is in position to wind up its affairs and asks the consent, in writing, of a majority of shareholders. Upon receipt of majority consent, the company will distribute, as soon as possible after December 15, a dividend of $20 per share to stockholders, from capital account. Ashland Refining Co. was the purchaser of most of Cumberland's properties.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Mar. 11	26.53	July 15	19.79
Mar. 18	26.78	July 22	21.33
Mar. 25	26.85	July 29	20.68
Apr. 1	24.80	Aug. 5	20.80
Apr. 8	25.52	Aug. 12	21.00
Apr. 15	24.72	Aug. 19	24.25
Apr. 22	22.73	Aug. 26	23.26
Apr. 29	20.54	Sept. 2	22.30
May 6	20.74	Sept. 9	20.28
May 13	20.38	Sept. 16	18.30
May 20	19.25	Sept. 23	17.64
May 27	18.35	Sept. 30	15.83
June 3	18.00	Oct. 7	15.86
June 10	19.62	Oct. 14	16.43
June 17	19.23	Oct. 21	17.58
June 24	22.33	Oct. 28	16.80
July 1	22.32	Nov. 4	18.86
July 8	21.24	Nov. 11	18.76

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending Nov. 7)

1931 High	1931 Low	Week ended Nov. 7 Sales	Week ended Nov. 7 High	Week ended Nov. 7 Low	Close Nov. 11	Stocks	Outstanding capital	Par value	Div. rate	Payable or last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1	⅛	200	¼	¼	..	Atlantic Lobos	499,448	N.P.	....	5-28-30	..	..	..	..	1	¼
16	6¼	No sales	..	..	..	Borne Scrymser	$1,000,000	$25	....	10-15-30	56½	44½	46½	25	25	11¼
56	39	No sales	..	..	..	Buckeye Pipe Line	$10,000,000	$50	$1Q	12-15-31	76	53	74½	55	69	39⅞
129½	88	No sales	..	..	..	Chesebrough Mfg.	$3,000,000	$25	$1Q‡	9-30-31	161	117	210	130	184⅞	104¼
3⅞	1⅝	20,200	2½	2	..	Creole Petroleum	5,977,872	N.P.	....	.....	17½	9½	11¾	5⅝	7⅞	3
39	20⅝	50	26	26	..	Cumberland Pipe Line	$1,500,000	$50	50cQ	6-15-31	114	67	75¾	40	65¾	20¼
36	19	No sales	..	..	..	Eureka Pipe Line	$5,000,000	$100	$1Q	11- 1-31	88	64½	70½	40	54¾	26
3	1	No sales	..	..	..	Galena Signal Oil	$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	47¾	4,400	61⅞	53¼	..	Humble Oil & Refining	$74,103,300	$25	50cQ	10- 1-31	114¾	59½	128	74⅛	119	57¼
18¼	7⅜	8,200	12	10¾	11¼	Imperial Oil of Canada (new)	25,421,768	N.P.	12½cQ	12- 1-31	104	56¾	41	22	30	15
21⅛	5½	100	8¼	8¼	8½	Indiana Pipe Line (new)	$3,000,000	$10	25cQ	8-15-31	91⅞	74⅜	41⅞	26	41	14½
15½	7⅜	22,300	12	10½	11⅜	International Petroleum (new)	14,247,088	N.P.	25cQ	9-15-31	55	35	30⅜	15	24	11⅜
17½	8¼	200	11	10	..	National Transit	$6,362,500	$12.50	25cQ	9-15-31	32⅜	19⅜	25½	10⅛	22⅜	11½
14½	5⅞	900	9	8½	..	New York Transit	$1,000,000	$10	25cQ	10-15-31	75	38½	17½	10	21⅜	10½
35½	20	100	35½	35	..	Northern Pipe Line	$2,000,000	$50	$2SA	7- 1-31	69	56½	63	41	54	26¼
15½	6	No sales	..	..	..	Penn Mex Fuel	$10,000,000	$25	50c	10-31-31	84	28	44½	20	32	12
16⅞	3¼	No sales	..	..	..	Solar Refining	$4,000,000	$25	....	12-20-29	..	..	50	20	33	4⅞
23⅞	12	2,300	15¼	14¼	..	South Penn Oil	$30,000,000	$25	25cQ	9-30-31	71⅞	36¾	60¼	35⅛	45⅞	16⅛
17	9	100	13	13	..	Southern Pipe Line	$1,000,000	$10	50cQ	9- 1-31	19	15	22½	13	20⅞	8⅜
42½	25	50	39	39	..	Southwest Pennsylvania Pipe Line	$1,750,000	$50	$1Q	10- 1-31	102	70	70	60	64	32
38½	15⅞	32,200	23⅞	21⅜	22½	Standard Oil of Indiana	$348,175,069	$25	25cQ	9-15-31	95⅞	70⅞	63	45	59⅞	30
23⅜	13¼	5,600	17⅞	16	17¼	Standard Oil of Kentucky	$25,654,516	$10	40cQ	9-30-31	179¾	122¼	46⅞	29	40½	18⅜
36½	16½	400	25	24	..	Standard Oil of Nebraska	$4,649,225	$25	50cQ	12-21-31	54⅞	39⅞	50¼	40	48⅞	34⅝
62½	35	700	42½	39½	44	Standard Oil of Ohio	$14,000,000	$25	62½cQ	10- 1-31	134	71	129	60	108½	43¼
4½	2⅝	100	3	3	..	Swan-Finch Co.	$861,466	$25	....	1-15-29	23¼	16	18	10	10	4

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending Nov. 7)

1931 High	1931 Low	Week ended Nov. 7 Sales	Week ended Nov. 7 High	Week ended Nov. 7 Low	Close Nov. 11	Stocks		Outstanding capital	Par value	Div. rate	Payable or last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1¾	¼	3,100	½	⅜	..	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3⅛	8⅝	1⅛	4½	½
16⅞	6¼	100	11¼	11¼	..	British American Oil Corp.		1,311,321	N.P.	20cQ	10- 1-31	55	32¾	62	7⅞	23	13⅜
2⅜	½	No sales	..	..	..	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2¾	⅝
20¾	5¼	62,900	8¼	7½	8	Cities Service	(sh)	24,290,359	N.P.	30cA§	11- 1-31	90⅞	54	68¼	20	44¼	13
84¾	35⅜	800	55½	53¾	..	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	11- 1-31	103¼	94½	98¾	84	93⅞	78¼
½	⅛	200	⅛	⅛	..	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	⅝	⅛
2¾	1⅜	No sales	..	..	..	Consolidated Royal		$5,527,875	$10	5cQ	10-25-31	8⅞	6¼	11⅛	2½	5⅞	2
⅝	⅛	No sales	..	..	..	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	2	1,600	3	2⅜	..	Darby Petroleum (new)		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21¾	4¼
6	1¾	No sales	..	..	..	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40¼	25	No sales	..	..	..	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20¾	60	30
75½	38	13,900	57⅜	51	50¾	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	10- 1-31	165	101⅛	209	115	166⅞	58½
⅝	3/16	4,700	1/16	¼	1/16	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅜	1¾	⅜
1⅞	½	No sales	..	..	..	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	1/16	800	½	⅜	..	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅛	1	4¾	½
6¾	2¾	No sales	..	..	..	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅞	20	38⅞	18	29	4⅞
25	7⅛	3,400	10	9¾	10	Lone Star Gas	(sh)	5,000,000	N.P.	22cQ	9-30-31	69⅛	48½	67⅞	28	55⅞	19⅝
½	⅛	2,000	¼	1/16	1/16	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1⅞	½	1¼	½	½	⅛
5	2⅝	500	4½	4½	..	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅞	1½	No sales	..	..	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2¾	6⅜	2¼	7½	1¾
½	⅛	No sales	..	..	..	Mountain & Gulf		$4,000,000	$1	....	4-15-31	1¾	.76	1½	½	⅝	⅜
5⅞	2½	1,100	3⅝	3¼	3⅝	Mountain Producers		$1,682,182	$10	25cQ	10- 1-31	28⅞	19½	22⅞	7	12⅛	3¾
1½	½	200	⅝	⅝	..	New Bradford Oil		$1,095,291	$5	....	4-15-31	5⅝	4¼	5	2½	3½	1⅛
3	¾	600	1⅛	⅞	..	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1½
3½	1	400	2⅛	2	..	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2⅛
½	⅛	2,100	1/16	⅛	..	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	⅜	6,300	1⅛	¾	¾	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅞
3⅛	½	2,900	1⅝	1	..	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4⅛	8½	1⅛	5⅝	1
3	1	100	1½	1½	..	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	2	8⅝	2
1⅜	¼	1,200	½	⅜	..	Salt Creek Consolidated	(sh)	1,286,300	$10	....	4- 1-31	7¼	5½	5⅞	1⅞	2½	½
7¾	3¾	2,000	4¾	4	4⅞	Salt Creek Producers	(sh)	1,496,859	$10	25c	11- 2-31	35	23⅛	25⅞	9	15¼	5¼
5½	1/16	5,600	1/16	½	½	Sunray Oil	(sh)	1,163,185	$5	....	4-15-31	..	..	12	5⅝	10	2
1⅞	⅜	107,000	⅝	½	½	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4¾	6½	1¾	4½	⅝
3½	1⅛	No sales	..	..	..	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
2¼	¼	10,800	⅞	½	½	Y Oil & Gas		100,000	N.P.	....	.....	8⅜	2⅛	2⅞	½	2½	⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending Nov. 7)

1931 High	1931 Low	Week ended Nov. 7 Sales	Week ended Nov. 7 High	Week ended Nov. 7 Low	Close Nov. 11	Stocks		Outstanding capital	Par value	Div. rate	Payable or last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
23	13	2,100	16½	14½	..	Amerada Corp.	(sh)	922,075	N.P.	50cQ	10-30-31	43⅞	27⅛	42⅝	17½	31½	16½
12⅜	2¼	200	2⅞	2½	..	American Republics Corp.	(sh)	209,180	N.P.	....	12-31-30	85	51⅛	64¾	12½	37	5⅛
31	9¼	No sales	..	..	..	Associated Oil		$57,260,300	$25	....	6-30-31	53⅜	37½	47¼	34½	51	30
23⅝	9½	24,875	15⅞	13⅜	14½	Atlantic Refining		$66,763,775	$25	25cQ	9-15-31	66⅜	50	77⅞	30	51⅜	16⅝
14½	4¾	38,600	7⅞	6½	7⅝	Barnsdall Corp. A		$56,546,600	$25	....	5-11-31	54	20	49⅛	20	34	8⅝
12	5	48,500	9¼	8	8⅜	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	12-15-27	..	..	47⅞	18	30½	7¾
47	9⅝	10,300	18	16	15½	General Asphalt	(sh)	413,333	N.P.	50cQ	9-15-31	94⅞	68	94¾	42¼	71½	22⅜
68½	19	21,600	33⅜	29⅜	30⅝	Houston Oil		$24,968,600	$100	....	10-17-30	167	79	109	26	116⅞	29¼
4⅝	1⅝	1,300	2⅝	2	..	Indian Refining		$12,564,070	$10	....	10- 1-30	39⅝	9	53	13⅛	17	2
4½	1⅜	400	2	1¾	..	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	½	1,900	1	⅞	..	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅜
16¾	5	22,300	9½	7⅝	8⅛	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	2-16-31	44½	25⅛	39⅞	22⅛	32	11
19½	6½	42,500	10½	8½	9	Ohio Oil	(sh)	6,648,052	N.P.	....	3-14-31	84	58½	79⅞	64¼	32	16
35⅛	20	No sales	..	..	..	Pan American P. & T.		$50,084,700	$50	40c	10-20-31	50⅞	38¼	69	40½	46½	42
36½	20	200	24⅛	23½	..	Pan American P. & T. "B"		$121,110,650	$50	40c	10-20-31	59⅞	37⅜	69¼	40½	67¼	30
4¼	¾	400	1⅝	1½	..	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12¾	1¾
20¼	9½	400	12	9½	..	Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	20	47½
16⅝	4¾	38,200	8⅝	7	7¾	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅜	11½
1½	⅝	7,200	¾	⅝	½	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3¾	⅞	19,000	1⅝	1¼	1⅜	Pierce Petroleum	(sh)	2,500,000	N.P.	....	2-16-31	7	3½	5⅞	½	7⅛	1⅛
20¾	5½	7,200	9⅝	8¼	8⅞	Prairie Oil & Gas		$60,848,000	$25	....	3-31-31	68	46	65⅜	40½	54	11¼
26½	7⅝	9,100	11⅝	9½	10⅝	Prairie Pipe Line		$101,250,000	$25	....	6-30-31	280	172	65	45	60	16⅝
6	1½	300	2	2	..	Producers & Refiners		$37,438,950	$50	....	9-15-23	29⅞	16	25⅞	4	11⅞	1
16	4¼	350	7	6½	..	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46¾	25½	40	11½
11⅞	5	14,500	7½	6⅜	7¼	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30¾	20	27¼	7⅝
6⅜	⅞	1,500	1	⅞	1	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	23	49⅝	20	9¾	4⅛
10¼	2⅛	10,000	3⅛	2¾	3⅛	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25¾	5
42⅝	13½	8,100	18⅝	17⅜	17⅞	Royal Dutch N. Y.	(sh)	611,303	....	$0.938	8- 4-31	64	44⅝	64	43⅛	56½	36⅞
20¾	5½	37,800	10⅜	8⅞	9	Seaboard Oil of Delaware	(sh)	1,244,383	N.P.	....	10- 1-24	72	45⅜	59⅜	8¼	37	9¾
34	9¾	18	10¼	10¼	..	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	7- 6-31	47⅞	41⅜	51½	40⅝	48⅜	26
10¼	3¼	36,500	5⅜	4⅜	4⅜	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31⅜	19	25½	5¼
11	4⅜	20,100	7¼	5	6	Simms Petroleum		$8,353,620	$20	....	9-15-30	27½	18⅛	40⅛	15	37	5⅝
15⅞	5½	132,600	9¼	7⅜	8¼	Sinclair Consolidated	(sh)	5,500,000	N.P.	....	4-15-31	46¾	17⅜	45	21	32	9⅜
103	77	300	87	87	..	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-14-31	110	102⅛	111	103	112¼	86
12⅞	3⅛	4,700	5⅞	4⅜	5¼	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	12	10⅛
21	12⅛	68,000	15½	14¼	14½	Socony-Vacuum	(sh)	31,923,072	$25	40cQ	9-15-31	..	..	..	..	..	..
51¾	28⅛	64,800	36¼	33⅞	34½	Standard of California	(sh)	12,594,098	N.P.	62½cQ	12-15-31	80	63	81⅞	51½	75	42½
19	8¼	2,600	12¼	10⅜	12⅝	Standard of Kansas		$8,000,000	$25	....	3-16-31	37¾	15	33¾	18	49	14⅜
52½	28¼	116,900	37½	34⅜	35½	Standard Oil of New Jersey		$634,999,200	$25	25cQ§	9-15-31	59⅜	37¾	83	49	84⅞	32½
45¼	26¾	400	32⅜	32⅛	..	Sun Oil	(sh)	1,416,869	N.P.	25cQ	9-15-31	77	31½	68⅜	55	70	39
1¾	½	700	¾	⅝	..	Superior Oil Corp.	(sh)	766,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	¾
36¼	15	48,400	21⅜	19⅜	20¼	The Texas Corporation		$246,204,900	$25	50cQ	10- 1-31	74¾	50	71⅞	50	60½	28¼
6½	2½	6,900	3½	3⅛	..	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
18	9⅞	300	9⅞	9⅞	..	Tide Water Oil	(sh)	2,191,759	N.P.	....	6-30-31	41½	19⅝	40	14	31	13
83	35	200	38	38	..	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	11-16-31	100⅛	86	97½	85⅛	94⅞	71
9	3½	18,400	5¼	4¼	4½	Tide Water Associated	(sh)	5,560,424	N.P.	....	2-16-31	25	14¾	23½	10	17¾	5⅞
68	20½	2,000	33	25½	35½	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	10- 1-31	..	..	90⅞	74½	89¾	55
26⅝	11¾	14,000	18	15¼	17	Union Oil of California		$104,342,375	$25	50cQ	11-10-31	58	42⅜	57	42⅛	50	10½
25⅛	18½	1,600	20	18⅝	..	Union Tank Car	(sh)	1,254,048	$100	40cQ	12- 1-31	128½	110	163¾	121⅞	38½	23
7⅜	1	1,800	3	2⅜	..	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¼
9⅜	3	2,200	5¼	4¼	..	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6½

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Reducing Gasoline Tax Evasions

Legislative Safeguards Can Materially Aid in Collection of Taxes. Explain Suggested Provisions for State Laws

By William A. McAfee
Standard Oil Co. of Ohio*

The purpose of this paper is to suggest legislative safeguards designed to aid in solving the increasingly serious problem of gasoline tax evasion. The words "aid in solving" are designedly used, for everyone knows that laws and even constitutional provisions—no matter how drastic—often fail to accomplish their purposes, as the supporters of the prohibition laws have discovered. Success or failure of a law depends upon its general acceptance by the community at large, upon the efficiency of its administrators, and upon the general structure and specific provisions of the law itself. It is undoubtedly true that the nature of the structure and specific provisions of any law is a very important factor in determining its success or failure, and it is certainly to the best interests of the petroleum industry to see to it, in so far as it lies in its power, that gasoline tax laws are so drawn that they may be easily and effectively administered, and that evasion of the tax may be minimized to the greatest possible extent.

It seems to the writer, after examining most of the gasoline tax laws now in force, that many of them may be criticized from the point of view of effectiveness on two general grounds — the first ground being that their general frame-work is not so designed as to make administration as easy as possible; and the second ground being that they fail to contain certain specific provisions which would obviously make evasion much more difficult.

Framework of Law

What should be the framework of a gasoline tax law designed to produce the greatest effectiveness and ease of administration? That is to say, on whom should the tax be levied? Should the consumer, the retail dealer, the jobber, or the first person receiving or selling motor fuel within the state, viz., the importer or local refiner, be the taxpayer? Should the amount of tax which the taxpayer is obligated to pay be determined by the amount of motor fuel sold or used by him within the state (the so-called "sales tax"), or by the amount of motor fuel received by him within the state (the so-called "receipts tax")? Should the definition in the law of "motor fuel" include gasoline only, or should it include a greater range of petroleum products? And, finally, should the law contain provisions for exemptions from tax or refunds of tax on motor fuel sold or used for non-highway purposes? A proper solution of these problems as to the general framework of gasoline tax legislation will be of great help in solving the problem of tax evasion.

The first question to be answered in setting up the general framework of an effective gasoline tax law is the question: who should be obligated to report and pay the tax to the state? It would be next to impossible to collect it from the consumer. To collect it from the retail dealer is extremely difficult, because of the large number of taxpayers involved and the consequent difficulty of checking records, making collections, and prosecuting evasions. The impracticability of a gasoline tax law levying a tax on the retail dealer has been pretty generally recognized; and, as a matter of fact, the last law of this type in force in this country, viz., the Pennsylvania law, has recently been repealed. The ideal tax from the point of view of easy and effective administration is the tax levied at the source, i.e., upon the refiner as to motor fuel refined by him in the state, and upon the importer as to motor fuel imported by him from without the state. The number of taxpayers under a law of this type is reduced to the absolute minimum, with a consequent ease in checking and collecting the tax; and in states where there are no local refineries, a tax of this general framework imposes no hardship, and is as nearly ideal in operation as any law of this nature can be. However, in states where there are local refineries, it has been found that a tax at the source on the refiner and importer results in a serious discrimination against the local refiner, for the reason that when the local refiner sells his gasoline to a jobber or dealer, he must protect himself by charging and collecting the tax which he is under obligation to pay to the state; and in a great many cases the refiner does not wish to extend any credit. In such cases the gasoline tax must be collected from the jobber or dealer in addition to the price of the gasoline at the time of delivery. On the other hand, if the dealer or jobber, instead of buying from the local refiner, imports his gasoline from outside of the state, he does not have to pay his gasoline tax when the gasoline is dumped into his storage tanks, but later reports and pays the tax himself to the state on the imported gasoline according to the time schedule fixed in the gasoline tax law. Under most laws he would not be obligated to pay the tax to the state for at least 20 days after receipt of the imported gasoline, and might have a much longer period. Such a dealer or jobber in a state having a tax strictly at the source, viz., upon the refiner or importer, would naturally prefer to buy from sources outside of the state, rather than patronize the local refiner, in order to conserve his cash, of which he is usually short.

In order to avoid the hardship on the local refiner referred to above, it would seem advisable in states where there is a local refining industry, to permit the local refiner to sell gasoline tax-free to jobbers, dealers or consumers holding licenses from the tax-enforcing authorities, but only in tank car, cargo or barge lots, which are relatively easy to trace. Such a tax might be termed a "modified source tax." It has been found that the extension of this privilege to the local refiner—of selling gasoline tax-free when the sale is made under the above restrictions—does not materially increase the difficulty of collecting the tax or the chance of evasion, although this modification does increase somewhat the number of persons obligated to pay the tax, and, therefore, the work of the administrative officials. This privilege should, of course, be extended only if the law contains provisions requiring sellers of such tax-free motor fuel to report all such sales monthly, together with such information as may be necessary to trace each tax-free shipment to its destination, and requiring reports from carriers of all motor fuel transported into or within the state. As a matter of fact, there should be no material objection to extending the privilege of tax-free sales or receipts even still further, and permitting any number of tax-free sales or deliveries between licensed taxpayers in tank car, cargo or barge lots, provided that no unlicensed taxpayer appears in the chain of title, and provided that the tax law contains the above-mentioned safeguards. Indeed, in states having a so-called "receipts tax" and a fixed allowance for evaporation, shrinkage, etc., justice would seem to require some such provision.

Type of Tax

We come now to the second question to be answered with regard to the general framework of a workable gasoline tax law. Should the amount of tax which the taxpayer is obligated to pay be determined by the amount of motor fuel sold or used by him within the state (the so-called "sales tax") or by the amount of motor fuel received by him within the state (the so-called "receipts tax")? In many of the states, especially in the East, the measure of the tax is the number of gallons of motor fuel sold or used by the taxpayer. Tax administration officials, in order to check the accuracy of a taxpayer's return for any period, must, therefore, check or audit the sales of the taxpayer during the period; and in practice it has been found extremely difficult to check the sales records of the smaller taxpayers. A great many of the smaller taxpayers do not keep proper sales records—some with the view of evading the tax, and some through sheer carelessness. Even where proper sales records are kept, an audit of same has proved to be too much of a burden upon the taxing authorities. The great trouble with this form of tax law is that it lies within the power of the tax evader to falisfy or destroy the only direct evidence on which the taxing authorities can base their claim for tax, and it is believed that a considerable amount of tax evasion is accomplished by the falsification and destruction of sales records. It is a favorite practice of taxpayers to keep their books and make their tax reports in such a way as to show a small volume of taxable sales and a large nonexistent inventory of motor fuel, which the taxing authorities can only detect by taking a physical inventory themselves — an extremely onerous task. In practice, the existence of such a false inventory is discovered, if at all, only after it is too late to enforce collection of the tax. Another very serious objection to this form of law is that the taxing authorities are at a disadvantage in prosecuting tax evaders or attempting to collect taxes by civil suits, for the reason that, in order to establish the case against an evading taxpayer under this form of law, they must prove in court the actual amount of motor fuel sold or used by him. The taxpayer's records are the only available direct evidence of this; and, if they are falsified or deficient, they will be useless as evidence, unless the falsification or deficiency is apparent on their face, which is seldom the case. In such cases, the best the taxing authorities can do to establish their case is to try to prove the deliveries of motor fuel to the taxpayer over the period in question, the inventory of the taxpayer at the beginning of the period, the amount of sales reported by the taxpayer for the period and the taxpayer's inventory at the end of the period. If the taxpayer's inventory at the end of the period as proved is less than it should be in view of the size of the opening inventory, the amount of deliveries and the amount of sales during the period in question, the inference arises that the taxpayer has omitted to report sales made. The taxing authorities have to make their case on this inference, which, of course, is a somewhat weak one, in as much as the taxpayer or his lawyer may advance many other plausible reasons for the shortage in inventory at the end of the taxable period, such as unusual leakage, theft by employes or other losses. A skillful lawyer for the defense can make a great deal out of the weaknesses of the testimony the taxing authorities are forced to use, and juries are very reluctant to give convictions if the defense is skillfully handled in such cases.

"Receipts Tax" Workable

Realizing the weakness of the sales tax from the administrative point of view, many of the mid-western states have adopted the so-called "receipts tax," which the writer, after experience with both types of law, believes to be more workable in operation, and less likely to

*Before annual meeting American Petroleum Institute, Chicago, November 11.

INCREASE IN FIELD OPERATIONS IN OCTOBER IS SHOWN BY REPORT

The number of wells completed in October in the fields east of California was 221 more than in September, while at the close of the month there was an increase of 19 in new operations as compared with the end of September, indicating a net increase of 240 in field operations in October. The bulk of this increase was in the East Texas area. Following is the report for October:

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern	133	265	16	38
Central Ohio	58	206	13	22
Lima	24	86	4	13
Indiana	8	....	6	2
Michigan	15	9,550	4	6
Kentucky	21	518	2	7
Illinois	2	2	1	0
Kansas	38	11,387	8	9
Oklahoma	57	144,241	23	11
North Central Texas	60	1,142	32	5
E. Cent. and E Tex.	469	58,169	23	0
East Texas gas field	8	....	8	0
West Texas	12	2,120	3	0
Panhandle Texas	8	1,835	0	4
Gulf Coast	33	19,483	9	1
Southwest Texas	29	4,799	16	2
North Louisiana	21	1,117	9	4
Arkansas	2	1,450	0	0
Mississippi	8	....	3	5
Montana	3	..	0	3
Wyoming	6	180	4	0
Colorado	2	950	0	0
New Mexico	3	75	2	0
Total October	1,020	257,605	186	142
Total September	799	167,782	218	147
Difference	221	89,823	32	5

The initial production of the various pools in the East Texas area represents only the first hour's or fractional part of an hour's production, as the wells are permitted to flow only a short time in conformance with the State's curtailment orders, or for other reasons. In some instances no gauge whatever is taken on the initial brief flow of the wells. None of the oil companies is keeping even an estimate on potential initial production in the East Texas Field.

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern	51	213	264
Central Ohio	29	94	123
Lima	1	15	16
Indiana	7	55	62
Michigan	70	96	166
Kentucky	10	75	85
Missouri	0	1	1
Tennessee	0	14	14
Illinois	2	17	19
Kansas	22	112	134
Oklahoma	53	217	270
North Central Texas	35	93	128
East Central and E. Texas	232	424	656
East Texas gas field	5	35	40
West Texas	14	72	86
Panhandle Texas	15	36	51
Gulf Coast	12	83	95
Southwest Texas	10	106	116
North Louisiana	10	58	68
Arkansas	8	28	36
Mississippi	10	19	29
Alabama	2	3	5
Montana	17	69	86
Wyoming	9	74	83
Colorado	13	84	97
New Mexico	6	53	59
Utah	1	19	20
Total October	644	2,165	2,809
Total September	611	2,179	2,790
Difference	33	14	19

be evaded than the sales tax. Under the so-called "receipts tax" law, the amount of tax payable by the taxpayer for any period is directly measured by the number of gallons of motor fuel received by him within the state during that period, less a fixed percentage allowance for evaporation, leakage, and loss in handling. This type of law should also provide that, while the tax should be paid to the state each month strictly on the above basis, a refund should be obtainable by the taxpayer of the tax paid on any motor fuel lost or destroyed by reason of extraordinary cause, such as fire, theft, explosion, etc., upon satisfactory proof thereof to the taxing authorities.

The advantage of this type of law over the sales tax type is the relative simplicity of checking the returns of the taxpayers. In order to verify the accuracy of the return of any taxpayer for any period, the taxing authorities can use as a check the reports of railroads and other carriers as to shipments to the taxpayer during the period, and also the reports of other taxpayers in the state making tax-free shipments to him. This method of checking has been found to be very effective in the states where it has been tried; and, of course, is much simpler than an audit of sales records. It is obvious that this type of law makes impossible the kind of evasion practiced under the sales taw laws, i.e., falsely reporting a small volume of sales and a nonexistent inventory of motor fuel on hand. In cases of prosecution for tax evasion, the taxing authorities can prove their entire of railroads or other carriers and their records showing the amount of the actual deliveries made to the taxpayer, and do not need to rely for proof of their case on any weak inferences of facts as in the case of prosecution of evaders under the so-called "sales tax."

The receipts tax has been very successful in all of the states where it has been tried; and, although there might appear to be certain difficulties and hardships involved in the adoption of such a tax in states where large quantities of motor fuel are shipped in and stored at marine terminals, these difficulties and hardships can, in the writer's opinion, all be removed by a proper definition of what constitutes "receipts" at such points. Tax-free transactions between licensed taxpayers can be provided for under this type of law as well as under the sales tax law.

Definition of "Motor Fuel"

This brings us to the third question to be considered in setting up the general framework of a gasoline tax law, and that is: the proper definition of "motor fuel." One of the favorite methods of tax evasion is, of course, the blending of a nontaxable product with gasoline, or the billing of gasoline under a name such as "distillate" or "naphtha," or some similar product, in states where the definition of motor fuel is not broad enough to include such products. In order to prevent this form of tax evasion, it would seem to be in the best interest of the petroleum industry to urge a very broad and sweeping definition of motor fuel, even though some inconvenience and hardship may result to the industry and its customers. For this reason, in my own state, the industry has acquiesced in a definition in the gasoline tax law and a practical interpretation of same which includes not only gasoline but also naphthas for dry cleaning and even turpentine substitute and rubber solvent. Practically the only kind of white product of petroleum which is excepted from the definition is kerosene, and that, of course, is taxable when it is mixed or blended with gasoline so as to produce a product salable as motor fuel. The hardship of such a definition on legitimate industries, such as the paint and rubber industries and the dry cleaners, can be partially obviated by permitting the sale of products, such as rubber solvent and naphthas, tax-free in quantities not less than tank-car lots upon the certificate of the purchaser that the products will not be used in motor vehicles. But the seller should be compelled to make a report of all such sales. The tax should be collected from the small tank wagon customer purchasing products such as dry cleaner's naphtha, and he should be compelled to file a claim for refund on same. It seems to the writer that those of us in the industry—and there are some—who oppose a broad definition of motor fuel are only defeating our own ends, and that a broad definition would be an effective help to the taxpaying, law abiding companies in suppressing evasion.

From the point of view of administration, provisions for refunding gasoline taxes to persons using motor fuel for purposes other than the propulsion of motor vehicles upon the public highways are an abomination. They seem, however, to be a political necessity, especially in the agricultural states. Refund provisions are always abused, and these abuses are difficult to check. Wherever politically feasible, this type of provision should be omitted from gasoline tax laws. I hazard a guess that if this were done, there would be considerably less enthusiasm for increases in gasoline taxes among the rural members of our state legislatures.

Putting Teeth Into the Law

So much as to the general framework of a gasoline tax law properly designed for effective administration and the prevention of evasion. In addition to a general framework of the character above described, there should be certain specific provisions incorporated in every gasoline tax law looking directly to its effective enforcement, a process commonly known as "putting teeth into a law." A licensing provision is one of the most important of these provisions. It should be made unlawful for any person upon whom the gasoline tax law imposes the duty of paying gasoline taxes to the state to engage in business unless he procures a license from the state taxing authorities. This license should be revocable by the tax commission, on short notice, upon any default in the report or payment of the tax; and there should be a severe penalty for engaging in business without a license, or for continuing in business after revocation of same. The taxing authorities should be given rather broad powers to refuse to issue a license to any person whose previous record has indicated that he is a tax evader. For example, the taxing authorities should have the right to refuse to issue a license to any person who had previously, at any time, defaulted in the payment of gasoline taxes.

As a prerequisite to obtaining a license, a bond, conditioned upon the prompt filing of true reports and the payment by the taxpayer of his gasoline taxes, with sufficient sureties, should be furnished the taxing authorities. In the opinion of the write, the bond should be at least in the sum of $5,000; and, in the event circumstances warrant, the tax authorities should be given the power to demand an additional bond, sufficient in amount to insure the payment of the tax. The penalty for failure to furnish additional bond should be a cancellation of the taxpayer's license. A well drawn legislative provision requiring the furnishing of a bond is of great aid to the state authorities in collecting gasoline taxes from irresponsible dealers.

Every properly drawn gasoline tax law should contain a provision giving a summary remedy to the taxing authorities for the collection of the tax. When a tax is due and unpaid, the official of the state charged with collecting the same should be empowered, without waiting for the trial of a law suit, to issue a warrant to the sheriff of the county where the defaulting taxpayer is located, authorizing the sheriff to seize the goods and chattels of the defaulting taxpayer at once and hold the same for the payment of the tax. This right of distraint is a very effective way not only of collecting the tax, but, what is usually more important, of putting the defaulting taxpayer immediately out of business. As a supplement to this provision, it might be well to provide that in any civil suit for the collection of gasoline taxes the state should have the right to attach the property of the defendant concurrently with the filing of the suit. This type of provision would prevent dissipation of the defendant's assets during the pendency of a suit for recovery of defaulted taxes.

The state should also be given a lien on all property of defaulting taxpayers within the state to secure the payment of defaulted taxes, good against any persons except mortgagees, pledgees or other persons whose rights have accrued prior to the time when notice of the lien is recorded in the office of the recorder of the county where the property is located. This type of provision is to be found in the federal income tax law, and has been effective in producing results in the collection of that tax.

Justice and constitutional considerations require that motor fuel received in a state for export, or sold for export from a state, should not be taxed under the gasoline tax laws of that state. For this reason most gasoline tax laws provide that, in computing the amount of taxable gallonage in monthly reports, the taxpayer is entitled to take a deduction for motor fuel received or sold for export. It might be well, if it is not too great a hardship upon the industry, to require that the deduction taken for export shipments should be supported by a schedule showing the name of the consignee, the name of the carrier, number of the tank car or tank truck or name of the ship in which the motor fuel is shipped, the point of destination, and the amount of each export shipment. Such a provision would help to minimize the falsification of export deductions, which has become quite prevalent. It would also supply the taxing authorities of other states with information of shipments into their territory, thereby enabling them to check up unreported imports of motor fuel. In this connection, there should be in every gasoline tax law a provision requiring the interchange of tax information with other states, for it is only by co-operation between the taxing authorities of the various states that tax evasion can be effectively suppressed.

Carriers' Report

One of the most effective enforcement provisions of gasoline tax laws has been found to be the so-called "carriers' report" provision. This provision should require railroads and other carriers, including motor truck companies and shipping companies, to report each month to the taxing authorities all deliveries made by them of motor fuel, and also kerosene, to points within the state. In each case the information should be sufficiently detailed to enable the taxing authorities to trace the shipment to the point of delivery. Such information has been found to be an invaluable aid to the taxing authorities, and this is true whether the law is the so-called "sales tax" or the so-called "receipts tax." Coupled with this provision, there should also be a provision requiring nonlicensed taxpayers purchasing motor fuel or kerosene in tank car or cargo lots, and reselling the same, to report each month detailed information to enable the taxing authorities to trace the movement of the tank car or ship after it leaves the hands of such nonlicensed taxpayer. The information furnished by these two types of reports, plus the information furnished in reports of licensed dealers as to tax-free shipments made by them, should afford a complete check on the disposition of motor fuel within the state in tank car or cargo lots.

If the law provides for refunds to farmers, etc., of the tax on motor fuel used for agricultural or other purposes, certain safeguards designed to lessen the chance of fraudulent refund claims should be imposed. A short period, preferably not more than 90 days after receipt of motor fuel, should be allowed for filing the claim for refund. The claim should be sworn to, and severe penalties for false application should be imposed. The original invoice for the purchase, on which refund is claimed, should accompany the application, together with some evidence of payment thereof, so that the state will not be refunding tax to an applicant who has not paid his bill to the seller of motor fuel. It has been found useful to provide that, in all cases where the purchaser claims to be entitled to a refund, he should be given a special form of tank wagon ticket issued by the taxing authorities which is made out in triplicate and which is numbered consecutively. The duplicate of this ticket, bearing the same number as the original, is required to be forwarded by the seller of the motor fuel each month to the taxing authorities. Every application for a refund is required under this provision to be accompanied by the original numbered ticket. When the application is received by the taxing authorities, the numbered ticket accompanying it is compared with the duplicate bearing the same number sent in by the oil company. By this means the fraudulent raising of invoices by applicants for refunds should be stopped.

The penalties for evasion of the gasoline tax law should be as severe as is reasonably possible. A fine and imprisonment should be the penalty for doing business without a license or after a license has been cancelled, and for false reports. For a mere failure to pay the tax or failure to file a report, there are constitutional difficulties in the way of imposing a jail sentence in states where the constitution forbids imprisonment for debt. However, in such cases a severe penalty should be added to the amount of the tax due.

Other good enforcement provisions are those giving to the taxing authorities the power of arbitrary assessment of tax if no return is filed, or of making assessment of additional tax if incomplete or false returns are filed, such assessments to be in court proceedings prima facie evidence that the amount thereof is due and payable to the state, and the burden of proof being put upon the taxpayer to establish their incorrectness.

The law should also provide that the records of the taxing authorities shall be open to public inspection, so that the industry itself may keep a check upon tax evaders. The taxing authorities should be given the right to examine books and records of taxpayers, and to compel the production of testimony before them in any investigations. Taxpayers should be required to keep records for a period of at least two years, in order to prevent destruction of evidence of tax liability. In addition to the above, it is recommended that there be a provision to the effect that any person giving information of violations of the gasoline tax law may be given a reward from public moneys up to, but not exceeding, in amount a certain proportion of the tax recovered or fine imposed by reason of his information. This type of provision, commonly known as the "tax ferret" provision, is found in the new Pennsylvania act.

I have tried to give you my ideas as to the general structure of and the proper "teeth" for a gasoline tax law. There are doubtless other provisions which would be extremely effective, and which will be developed as time goes on; and some of the provisions I have suggested may not prove in practice to be effective in the long run. I believe, however, that each of the provisions suggested in this paper are incorporated in the laws of some one of the various states, and we can test their efficacy in the laboratory of actual experience.

Eternal Vigilance

In closing, however, let me repeat the statement made at the opening of this paper that, no matter how good the structure, or how many the "teeth" in a gasoline tax law, it will fail unless properly administered; and it is submitted that the industry should give every aid to tax administration officials in the performance of their duties. The price of effective gasoline tax enforcement is eternal vigilance on the part of the taxing authorities and on the part of the industry.

DRILLING IN SOUTH CAROLINA

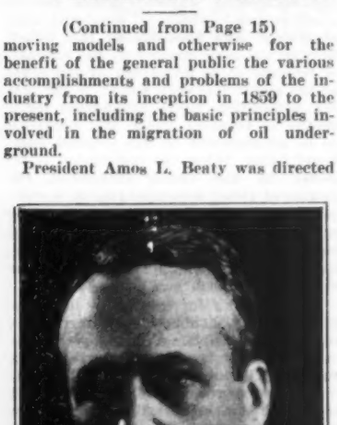
NEW BERN, S. C., Nov. 16.—With the derrick built to a height of 109 feet and much oil drilling machinery already on the site, the drilling for oil in Pamlico County will soon be under way, according to announcement of Ben F. Lamb.

NEW ERA OPENED FOR PETROLEUM INDUSTRY

(Continued from Page 15)

moving models and otherwise for the benefit of the general public the various accomplishments and problems of the industry from its inception in 1859 to the present, including the basic principles involved in the migration of oil underground.

President Amos L. Beaty was directed



Axtell J. Byles

to appoint a committee to canvass the industry in an endeavor to obtain the necessary funds now estimated at $160,000. The committee will co-operate with officials of the Century of Progress and the Museum of Science and Industry, which has assigned free space for housing permanently the exhibit.

The committee is composed of Frank R. Coates, H. L. Doherty & Co., New York; R. C. Holmes, The Texas Company, New York; F. A. Leovy, Gulf Production Co., Pittsburgh; H. L. Pratt, Standard Oil Co. of New York, New York; E. G. Seubert, Standard Oil Co. Indiana, Chicago; E. W. Sinclair, Sinclair Consolidated Oil Corp., New York;

Lacey Walker

W. C. Teagle, Standard Oil Co. (New Jersey), New York; and the chairman, H. M. Dawes, Pure Oil Co., Chicago.

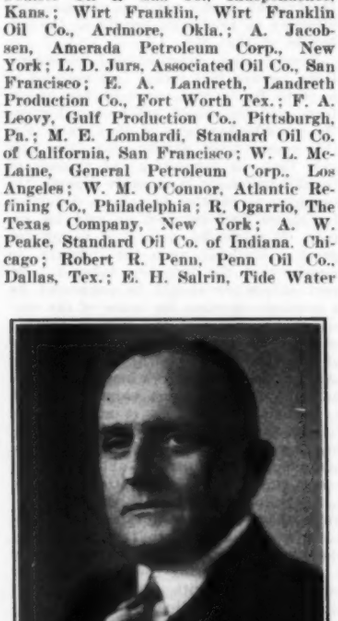
Action on Tariff

The board adopted a resolution endorsing, in principle, the imposition of a tariff upon the importation into the United States of crude oil and the refined products and derivatives thereof. The vote was 20 for, 16 opposed, 14 present but not voting, and 21 absent. It was voted to take a mail poll of all members of the institute on the tariff proposal.

Division of Production

The general committee of the Division of Production of the institute, elected by the membership, follows:

D. S. Bushnell, Northern Group of Pipe Lines, New York; C. E. Crawley, Sinclair Consolidated Oil Corp., New York; O. D. Donnell, Ohio Oil Co., Findlay, Ohio; Forest D. Dorn, Forest Oil Corp., Bradford, Pa.; W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; Wirt Franklin, Wirt Franklin Oil Co., Ardmore, Okla.; A. Jacobsen, Amerada Petroleum Corp., New York; L. D. Jurs, Associated Oil Co., San Francisco; E. A. Landreth, Landreth Production Co., Fort Worth Tex.; F. A. Leovy, Gulf Production Co., Pittsburgh, Pa.; M. E. Lombardi, Standard Oil Co. of California, San Francisco; W. L. McLaine, General Petroleum Corp., Los Angeles; W. M. O'Connor, Atlantic Refining Co., Philadelphia; R. Ogarrio, The Texas Company, New York; A. W. Peake, Standard Oil Co. of Indiana, Chicago; Robert R. Penn, Penn Oil Co., Dallas, Tex.; E. H. Salrin, Tide Water



William R. Boyd, Jr.

Oil Co., New York; H. M. Stalcup, Skelly Oil Co., Tulsa; H. M. Straight, Empire Companies, Bartlesville, Okla., and R. Van der Woude, Shell Petroleum Corp., St. Louis.

Those appointed by President Beaty are: E. R. Brown, Magnolia Petroleum Co., Dallas; W. N. Davis, Phillips Petroleum Co., Bartlesville; W. S. Farish, Humble Oil & Refining Co., Houston; J. Edgar Pew, Sun Oil Co., Philadelphia, and L. P. St. Clair, Union Oil Co. of California, Los Angeles.

The divisional officers of the Division of Production are: Chairman, Charles F. Roeser, Roeser & Pendleton, Fort Worth, Tex.; vice chairman, W. R. Boyd, Jr., American Petroleum Institute, New York, and, secretary, Carl A. Young, American Petroleum Institute, Dallas.

Two War Horses

Much has been said of the efficiency of the institute's staff and great credit is due William R. Boyd, Jr., executive vice president, for his ability in selecting intelligent workers to help him carry on the work. Every man on the staff is an expert in his particular line. The diplomacy, tact and patience of two members of the staff are especially tried during every convention of the institute, but the cordial regard in which these two men are held by all is abundant proof of their success in their respective positions, John S. (Doc) Cooke, secretary to Mr. Boyd, is on the job day and night, keeping records of meetings and sessions of the board of directors; answering thousands of questions; arranging appointments; and doing the many little things which always bob up at such meetings. Always smiling, his ready wit never dulled by long hours of work, Doc is worth the price of admission and everyone is in a better frame of mind after talking with him. The other war horse whose work is especially trying is Victor H. Scales, assistant director of the public relations department. Vic satisfies all wants of newspapermen for news, answers all their questions, telephones late developments to their offices, mails out all papers delivered at the convention, sees that adequate copies of all papers, resolutions, etc., are mimeographed and ready quickly for distribution, gets up the bulletin issued each morning of the convention, having to remain up every night until 3 o'clock in the morning or later going over proofs, and is the regular information bureau of the convention.

RESERVOIR ENERGY IS CRUCIAL POINT

(Continued from Page 16)

to save it from appropriation by his neighbors.

Its adoption would permit orderly and efficient oil field development. It would make unitization of oil and gas pools easy of accomplishment. It would reduce costs and tend toward elimination of rapid fluctuations of supply. It would insure to the small lease owner his just proportion of the oil and gas from the common pool at the least possible cost, regardless of whether or not he is able to finance its development; for undoubtedly some arrangement would be made whereby the cost of development, after discovery, would be assessed ratably against reservoir content, thus providing a ready means by which the cost of development could be secured and liquidated without the necessity of large capital expenditures. It would insure to the small royalty owner his just proportion of the oil and gas from the common pool regardless of whether or not his own small lot is drilled upon. It would in many cases enable the royalty owner to receive, subject to his proportion of development costs, eight-eighths of the oil from his land rather than one-eighth, since a lessee to provide for large initial developing costs would not be necessary. These situations, of course, would prevail only where large holdings were sufficiently extensive to warrant initial testing for discovery without calling upon small owners to contribute. After discovery, however, the small owner's share of the cost could be supplied out of his share of the reservoir content.

Paying Its Way

This new conception of oil field development, if generally applied, would be the greatest assistance to the man of small means who desires to become interested in the oil industry in a legitimate manner; and on the other hand it would eliminate the necessity of large initial capital expenditures for development purposes by the large companies—for the pool can be developed slowly and made to pay its way out of oil and gas extracted. It would, on the other hand, tend to eliminate the fraudulent stock promoter and make of the oil industry a stable business instead of a highly speculative enterprise as its best element with a large following of purely fraudulent promotion schemes as its worst feature.

It would tend toward reduction of costs and efficiency of extraction without which the American oil industry cannot long continue to survive in competition with cheap foreign oils. All these and many more advantages would arise out of the general adoption of the new conception of oil field development.

Addressing our attention to the second question, namely, the assistance the American Petroleum Institute will render toward adoption of this new conception, our answer is that it all depends upon the role the American Petroleum Institute elects to play in the endeavor. General adoption of the new conception is solely dependent upon the successful prosecution of a widespread legislative program—both state and federal. The things proposed cannot be done without changes in the law of oil and gas.

Consumers' Position

The greatest single factor in whether or not the law shall be changed is the consumer of petroleum products. He outnumbers all the rest. That legislator would be foolish indeed who does not consider the reaction of his constituency. In fact the American system of government is so designed that he must do so if he continues in office. Perhaps the next most powerful groups, because there are so many of them, are the royalty owners and the small producers. Without the sympathetic co-operation of these several groups, namely: The consumer, the royalty owner and the small producer, any such legislative program as is necessary to put over the new conception would be lost before the fight is started.

It is well to face the fact that in the present state of enlightenment of most members of the several groups mentioned, the new conception of oil field development looks like a monopolistic tendency; and that word alone is sufficient to close the minds of great multitudes against any argument in its behalf. Within the ranks of the institute itself, and even on its board, will this sentiment be encountered. Only after a long and convincing campaign of education presented under the most favorable auspices can there be any hope of enlisting the support of these several groups in behalf of the legislative program above described. This is not strange for it has taken seven years of controversy in the institute's ranks to bring it to a position of indorsement and it is by no means unanimous on that position yet.

Campaign of Education

Is the American Petroleum Institute the most logical agency under all circumstances to lead the campaign of education? We doubt it, for it likewise looks like monopoly to the great groups above mentioned, however unjustified that attitude might be. Efficient and successful as the institute has been in many of its activities, the spectacle of this presumed octopus (in the public fancy) endeavoring to educate the great multitudes of voters, who are likewise consumers, that this program is one designed for their benefit is not likely to meet with much success. In fact it is more likely to have the opposite effect.

On the other hand, if this campaign of education were led by state and federal governmental agencies, by royalty and independent oil men's associations, by recognized scientific societies not directly interested in the results, by conservation agencies, landowners and every other class and character of organization not directly connected with so-called big business, it is quite possible the voting and consuming public could soon be caused to realize that this program is in reality greatly to its advantage.

American Petroleum Institute co-operation is necessary, but its greatest field of opportunity is in educating its own membership, leaving to other agencies the development of principles and the educational processes so far as they apply to the great consuming public and so-called independent oil men, both of whom are more disposed than otherwise to look upon the new conception as being antagonistic to their own interests. We repeat, therefore, the assistance the American Petroleum Institute renders in promoting the new conception of oil field development will depend upon the role it elects to play.

REMAINS WITH BARNSDALL

E. B. Reeser, president of the Barnsdall Corp., has decided definitely not to accept the position of president of the Oil Producers Sales Agency of California and arbiter of the petroleum industry in that State. Mr. Reeser will go to California the latter part of this week on business for his company.

WANTS OIL MADE UTILITY

WASHINGTON, D. C., Nov. 16.—Application of public utility regulations to the big oil importing and distributing concerns, as well as to the independent groups, is urged by Senator Thomas (Dem., Okla.), as a means of giving a new lease of life for the independent oil industry.

TWO RULES GOVERN VAPOR LOCK PROBLEM

(Continued from Page 22)

as a typical summer temperature, the permissible Reid vapor pressure for each car at 40 miles per hour constant speed and on idling after such a run has been calculated, and these values are given in the last two columns of Table 1. At a constant speed of 40 miles per hour, with the atmospheric temperature at 90° F., the highest permissible vapor pressure for freedom from vapor lock ranges from 15.0 to 6.6 pounds per square inch, with an average value of 9.5 pounds per square inch. On idling after such a run, the highest permissible vapor pressure ranges from 10.3 to 4.3 pounds per square inch, with an average value of 7.2 pounds per square inch. At 100° F. atmospheric temperature, the permissible vapor pressures would be lower by 1.0 to 1.5 pounds per square inch.

The distribution of vapor pressures is shown below:

Constant speed — Vapor Pressure	Per cent cars	Idling — Vapor pressure	Per cent cars
Above 11	4	Above 9	11
10-11	32	8-9	19
9-10	23	7-8	19
8-9	30	6-7	30
Below 8	11	Below 6	21

Only 80 Per Cent of Cars Protected

For protection against vapor lock, on running, in the case of 90 per cent of the cars tested, the vapor pressure should be below 8 pounds per square inch, while on idling only 80 per cent of the cars are protected if the vapor pressure is 6 pounds per square inch. These averages are based on the assignment of equal weight to each of the 47 cars instead of on the basis of the numbers of each car on the road. That the general conclusion would not be materially changed, however, is suggested by the fact that, in 1931 cars, the permissible vapor pressure does not change appreciably with car price. This is illustrated below, where the average pressures in each price class are tabulated.

Price class	No. cars tested	Average permissible vapor pressure — Constant speed	Idling
$500-1,000	15	9.7	7.3
1,000-1,500	15	9.5	7.0
1,500-2,000	8	9.5	7.3
Above 2,000	9	9.5	7.3

The general conclusions from the data can be further illustrated by means of Figure 2, where the permissible Reid vapor pressures are plotted against the atmospheric temperature. The line labeled "ideal" represents a fuel system in which the temperature of the gasoline does not rise above that of the atmosphere. The space to the right of each line represents a region where vapor lock would occur under the conditions specified on the line, while the space to the left represents a region in which vapor lock would not be expected to occur.

For Sea-Level Operation Only

It should be emphasized that the permissible vapor pressures discussed thus far have been applicable only to sea-level operation. Permissible vapor pressures at various altitudes, however, may be computed readily from the values at sea level, assuming identical vapor-locking temperatures in both cases. If p_R is the permissible Reid vapor pressure at sea level and P is the atmospheric pressure in pounds per square inch at any altitude, then the Reid vapor pressure P_R' permissible at this altitude, for the same vapor-locking temperature as p_R, is given by the relation

$$p_R' = p_R \frac{P}{14.7} \quad \ldots\ldots\ldots\ldots\ldots (2)$$

The normal pressure P at any altitude may be obtained from the U. S. standard atmosphere table or chart. At 5,000 feet altitude $p_R' = 0.835\ p_R$, while at 10,000 feet $p_R' = 0.693 p_R$.

Some values for permissible vapor pressures are tabulated below:

Altitude	Permissible vapor press. lbs. per sq. in.		
Sea level	9.0	8.0	7.0
5,000 ft.	7.5	6.7	5.8
10,000 ft.	6.2	5.5	4.9

The values in each column apply to the same vapor-locking temperature.

The permissible vapor pressures given by equation (2) have probably a somewhat greater margin of safety than those at sea level, since the atmospheric temperature on the ground at 5,000 or 10,000 feet altitude is usually lower than at sea level. On the other hand, this tendency is offset to some extent by the fact that an engine usually heats up more while operating in elevated regions.

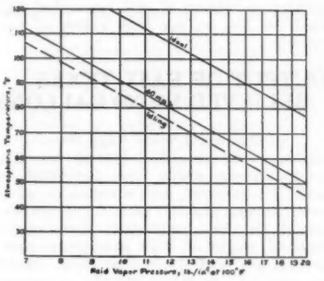


Figure 4—Permissible vapor pressures with car 29.

Comparison With 1930 Survey

A direct comparison between the results obtained in the present survey and those obtained in 1930 is made in Table 2 in the case of all comparable cars tested in both surveys. The data apply to a constant speed of 40 miles per hour, and the permissible vapor pressures are applicable to an atmospheric temperature of 90° F. It is seen that there is little change on the average; although, as far as these cars are concerned, there has been a slight improvement in the 1931 cars. On the other hand, a study of all the data in the two surveys indicates that the average increase in temperature ($\triangle$T) is 32° F. for the 1931 cars; while for the 1930 survey, it was 30° F. This represents a decrease in permissible vapor pressure in 1931 cars of about 0.3 pound per inch.

On the average it appears, therefore, that there has been no material improvement in 1931 cars. Individual models have been improved considerably, while others have become worse. Even where minor improvements in fuel-system design have been made, the general trend towards increasing horsepower has largely offset the minor improvements. The present situation demands major changes in design of fuel systems.

As an example of what can be done in the way of improvements in fuel-system design, the data obtained on cars 10 and 29 will be used as illustrations. The results on these cars are shown in Figures 3 and 4, respectively.

Case of Car 10

In the case of car 10, the temperature at the fuel-pump inlet is only slightly above the atmospheric temperature, so that at 90° F. a gasoline having a vapor pressure as high as 15 pounds per square inch could be used when driving at 40 miles per hour. This is made possible by effective installation of the line from the rear tank to the pump. However, it is seen that there is considerable difference between the permissible vapor pressures at constant speed and on idling. Material improvement in this respect could be made by changing the position and method of lubrication of the fuel pump.

With car 29, it is seen that there is little difference between the permissible vapor pressures at constant speed and on idling. This is due to the location of the pump on the end of the camshaft and to the avoidance of circulating hot crankcase oil through the fuel-pump shell. However, the permissible vapor pressures with this car are far removed from the values for an ideal fuel system, and a marked improvement would be possible if a better installation was made of the fuel line between the tank and the pump.

These two cars illustrate practical methods of improving the design and installation of fuel-feed systems. A combination of the good features of both designs should produce an almost ideal fuel system in which vapor pressures at least as high as 12 pounds per square inch would be permissible, even on idling. While this vapor pressure is probably higher than it would be desirable to use in hot weather, such a fuel system would permit almost complete freedom from vapor lock with present-day commercial gasoline.

Three Desirable Changes

On the basis of available information, three of the most desirable changes in fuel-system design and installation are as follows:

1. Placing the fuel line from the rear tank to the pump outside of the frame channel to a point practically opposite the pump, so as to have a minimum length of tubing inside the engine compartment, and insulating thermally this latter portion of the line.
2. Removing the fuel pump from the crankcase and driving it, for example, from the end of the camshaft.
3. Using oil cups or similar device to lubricate the pump rather than circulating large quantities of crankcase oil through the fuel-pump shell.

The incorporation of changes such as these in forthcoming models should go far to minimize vapor-lock troubles with the new cars. Even with equipment on the road today, it is by no means impossible to improve conditions materially by comparatively simple changes in installation. However, with the majority of these latter cars, freedom from vapor lock is largely a matter of careful control of vapor pressure. Co-operation between the refiner and the car manufacturer is essential, and the solution of the vapor-lock problem lies in a strict observance of the two rules: "Keep heat out of the fuel systems" and "keep propane out of the gasoline."

TABLE 2—COMPARISON OF RESULTS OF 1930 AND 1931 SURVEYS

1931 Survey — Car	$\triangle$T above atmospheric temp. °F.	Permissible vapor pressure	1930 Survey — Car	$\triangle$T above atmospheric temp. °F.	Permissible vapor pressure
1	35	9.0	A	43	8.0
4	25	10.6	R	20	11.6
5	28	10.2	H	49	7.2
7	41	8.2	C	24	10 9
14	26	10.5	G	31	9.7
15	29	10.0	P	19	11.8
19	18	12.0	B	17	12.1
20	26	10.5	L	38	8.6
24	27	10.3	J	30	9.8
25	26	10.5	M1	35	9.0
26	27	10.3	N	44	7.8
27	38	8.6	Q	23	11.0
30	37	8.8	E1	42	8.1
44	34	9.2	K	34	9.2
Average	30	9.9		32	9.6

"ACTION" IS SLOGAN OF PRESIDENT BEATY

(Continued from Page 15)

into black figures, but give us some hope for the future. My belief is we must co-operate; we must stick to the task and not only hold production down where it is, but reduce it somewhat. We are not going to do that unless we put our shoulders to the wheel and face the problem and surmount it, or solve it. I think we want, not to go home from this meeting and wait and see what is going to happen, but to get busy and keep busy and do something about it. I don't believe we can afford to think that conditions will right themselves. If we had acted in that manner and in that belief in the past few months, during the time of Mr. Reeser's leadership, I wonder where we would be today.

Officials Awake to Situation

It has been wonderful to receive the tenders of support that have poured in on me. I know a great many members of the industry. I know practically all of the presidents of the companies that are operating. I sense the feeling that they are awake to the situation, and that nothing short of prompt, decisive action will appeal to them or ought to appeal to them. I believe in any move that we make, to continue to improve our situation, there will be wholehearted co-operation.

I don't propose to be an arbiter or czar or anything like that. I wouldn't if I could and couldn't if I would, but I believe it is the duty of the president of the institute at times to make decisions subject to the approval of the governing board, the executive committee. Some may receive messages from me about what I think they ought to do. I am not going to ask for any agreements. We are not going to make any agreements, but if I should tell any what I think they ought to do and it appeals to them, they are probably going to do it. I believe there is that sense of co-operation in the industry, a feeling of co-operation, that will enable us to put over things that we could not in days gone by. I am talking about the vital question to the industry. I don't care anything about the trimmings or the things the institute does that, while good in themselves, are not vital to the issue. I shouldn't think much of the Petroleum Institute if it were only a body accumulating statistics. That is a good thing in its way, but we must somewhere find a basis for action, a ground upon which we can do things. Having the facts before us that we can proceed to act and do something that will help the industry. That is what we are in the institute for more than anything else, in my judgment.

I want to get down to the vital things and do them. I believe that we should see in doing those things that in the wisdom of the executive committee and the board of the institute are wise and helpful and go forward. That is my declaration of principles.

INSTITUTE PREPARES TO FIGHT TAX EVASIONS

(Continued from Page 95)

& Refining Co.; and J. Howard Pew, Sun Oil Co.

Officers for the division of marketing are: W. T. Holliday, Standard Oil Co. of Ohio, chairman; W. R. Boyd, Jr., executive vice president and secretary of the institute, vice chairman; and Paul E. Hadlick, American Petroleum Institute, secretary.

Officers for the division of refining are: Dan J. Moran, Continental Oil Co., chairman; W. R. Boyd, Jr., vice chairman; and R. P. Anderson, American Petroleum Institute, secretary.

Oppose Increases

The board of directors of the American Petroleum Institute adopted the following resolution on gasoline taxation:

"Whereas, the sole reason for an excise tax upon gasoline is the use of funds so derived for the construction and maintenance of adequate highways;

"And, whereas, for a period of almost 10 years such excise has been levied and collected by the states of the United States generally, and has, through the extravagance and recklessness of public officials, continually increased until it has reached the astounding aggregate sum of more than $500,000,000 per annum, and more per gallon of gasoline than the present wholesale price thereof;

"And, whereas, the original purpose of such excise has been accomplished to such an extent that such tax is no longer necessary or justifiable for highway construction or maintenance, but there is a steadily increasing effort to continue such tax in effect and even to increase the same, diverting the proceeds to purposes entirely disconnected from the use of gasoline or the benefit of the users, as distinguished from any other commodity or its users;

"And, whereas, gasoline is a necessity, not a luxury, and the enormous rate of tax thereon prevents the industry from obtaining a reasonable price for the prod-

uct and is responsible for nation-wide efforts to evade payment of the tax, which evasion and demoralization of the market is certain to continue unless the rate of taxation is materially and immediately reduced, defeating the purpose of the tax and jeopardizing the invested capital of the petroleum industry;

"And, whereas, if revenues for other purposes than highway construction and maintenance are to be raised by excise tax upon commodities, no reason exists that gasoline should bear the burden while other commodities remain free therefrom;

"Now, therefore, be it resolved, that the American Petroleum Institute, as the representative of the petroleum industry in the United States, make as one of its major activities an effort to impress upon the public and public officials the necessity for an immediate decrease in the rate of taxation and for the strict application of the proceeds of such decreased taxation to the construction and use of highways alone.

"Be it further resolved, that the institute set up such organization and personnel as it may require vigorously to prosecute a campaign to prevent increases and procure decreases, in gasoline tax, such activity to be financed by the solicitation of an initial fund of $100,000 from the membership of the American Petroleum Institute in fair and equitable proportion to their activities in all branches of the industry, such fund to be budgeted for said purpose alone and handled and disbursed through the regular channels of the institute."

ETHYL CORPORATION TO PROVIDE FOR "Q" BRAND

(Continued from Page 89)

mechanical deterioration require gasoline of 78 octane number for continued good performance. The new policy should, therefore, be the basis for a continued growth of the premium fuel business which it is our purpose to maintain and build up by all practicable means.

"During the past year and a half, since which time the suggestion to use lead in regular price gasoline was made, we believe we have heard and discussed all the various arguments for and against such policy. We are fully conscious that in reaching this decision we are not in harmony with the expressed views of some of our customers. We wish it were otherwise and that we could formulate some plan which would meet with universal approval. We have struggled with the problem, hoping to find some way to harmonize such differences as may exist. The nature of the problem is such that it is not to be expected a solution will be found that will be satisfactory to everyone. Our decision has been reached only after long, painstaking and earnest consideration of all the factors bearing on the subject. We cannot escape the conviction that the proposed contract represents the course that should be followed."

Provisions of Contract

The main provisions of the contract covering the new "Q" antiknock compound follow:

"Seller hereby licenses buyer to manufacture gasoline containing said 'Q' brand of antiknock compound in the United States of America and to sell and deliver same in the territory of the United States of America mentioned in the addendum hereto, in the following manner, and not otherwise:

"(a) To oil companies holding a license from seller to manufacture gasoline containing said antiknock compound.

"(b) To oil refining companies and jobbers who hold a license from seller to sell (but not manufacture) gasoline containing said antiknock compound.

"(c) To actual users or consumers thereof or to retail dealers for delivery directly by said dealers to users and consumers thereof.

"(d) The gasoline manufactured hereunder shall be sold by the buyers as the next highest priced motor fuel below buyer's Ethyl Gasoline, and this grade shall be considered to be buyer's best non-premium gasoline referred to in the agreement between seller and buyer in respect to the manufacture and sale of Ethyl Gasoline.

"It is understood between the parties that 'gasoline' includes any motor fuel; 'antiknock compound' refers to 'Q' brand of antiknock compound; and 'treated gasoline' means any gasoline or motor fuel with which the said compound is mixed, wherever same may appear in this agreement.

"Seller agrees to sell to buyer said antiknock compound on orders received therefor, in suitable drums (containing not less than 50 U.S. gallons of said compound), or in tank cars, freight collect, on the following terms:

"Effective as of the date a fully executed copy of this agreement is in the possession of seller, the seller agrees to sell and the buyer to pay seller for all shipments of said 'Q' brand of antiknock compound the sum of $13.25 per U.S. gallon of commercially pure tetraethyl lead contained in said antiknock compound (which is equivalent to thirty-five one-hundredths of a cent per cc. of tetraethyl lead), plus $10 for each drum in which the same is shipped, and in addition thereto the buyer shall pay seller fifteen one-hundredths of a cent for each gallon of gasoline with which it mixes or causes to be mixed said 'Q' brand of antiknock compound, which shall be referred to in transactions between the parties as a 'gallonage charge.'

"The parties hereto recognize that it would be detrimental to the good will in and reputation of said compound if it were mixed in gasoline not conforming to a certain standard of quality, and the parties therefore agree that said antiknock compound shall not be mixed with any gasoline that does not at least conform to the present specifications for U. S. Government motor fuel or any specifications that may hereafter be adopted for such fuel.

"The amount of said antiknock compound to be added to buyer's said gasoline shall be an amount—as determined by seller's test methods—to make the resultant product manufactured under this agreement have at the time of sale to the consumer an antiknock value of not less than 68 and not more than 70 octane number, with the understanding that gasoline which is marketed west of the Rocky Mountains may have an octane number as high as 72, and with the further understanding that the maximum octane number herein stated for gasoline marketed in any section may be raised, with the approval of seller, to meet local conditions.

"The engine used is the Ethyl Gasoline Series 30 and the engine conditions are exactly the same as those specified in the Series 30 instruction booklet for the rating of Ethyl Gasoline except that compression pressures of 136, 141 and 148 pounds are employed in rating octane numbers of 68, 70 and 72, respectively.

"Samples are rated against secondary standards which have been calibrated directly against mixtures of heptane and octane. Samples of secondary standards corresponding to 68, 70 and 72 octane number may be obtained upon request from seller.

"Seller reserves the right to change its test methods from time to time upon notice to buyer.

"The minimum content of commercially pure tetraethyl lead in the gasoline manufactured and/or sold by the buyer hereunder shall be thirty one-hundredths of 1 cc. per U.S. gallon of gasoline, and the maximum content of said tetraethyl lead shall be 1½ cc. per U.S. gallon of gasoline."

OUTPUT OF EAST TEXAS BELIEVED 500,000 GALLONS

(Continued from Page 90)

Dallas on October 27. During his talk to the group which had assembled to hear the proposal and discussions of a new "acreage basis" plan for prorating the field, he mentioned the "above ground" waste of high gasoline content natural gas, and stated that there should be several gasoline plants scattered throughout the district to process the natural gas, recover the gasoline therein and use the residue for repressuring when needed.

One company has made an exhaustive study and tests in the district, and other companies have had their petroleum engineers studying the situation, some of these engineers estimating that if all the gas produced in the district could be utilized in the manufacturing of natural gasoline, the revenue from that source alone would defray the operating expenses of all leases now under production.

Potential Output

Over 87,000,000 bbls. of oil has been produced in East Texas since January 1, 1931, and an estimated 26,997,000,000 feet of natural gas has been dissipated into the air during this time, which gas would have yielded around 107,997,000 gallons of Grade AA natural gasoline, according to estimates made by engineers. But until curtailment of oil production became a certainty on September 3 when the wells were reopened, allowed to produce only 225 bbls. per day, there were many uncertainties which existed as the cause to prevent companies from constructing natural gasoline plants in the district. At the present time curtailment is an established fact, and is apparently sure to remain in the field. Consequently, the companies are beginning to look upon the natural gasoline manufacturing business as another source of revenue for them, giving construction of plants new and more consideration, such plants proving of added benefit for repressuring purposes as pressures decrease, and wells stop flowing.

Following are some figures given on amounts of gasoline blown into the air, value of casinghead gasoline blown into air (wasted), and amount of wet gas produced for period which dated from January 1 to October 15:

GASOLINE BLOWN TO AIR (WASTED)

	gallons
January 1 to March 31	123,500
April	249,500
May	254,345
June	455,980
July	484,592
August 1 to 17	478,800
Wells were shut in on August 17	
September 3 to 31	363,700
Wells were reopened on Sept. 3	
October 1 to 15, inclusive	204,000
Total	2,505,920

MONTHLY VALUE OF CASINGHEAD GASOLINE BLOWN INTO AIR TO DATE, AT POSTED PRICE FOR GRADE AA GASOLINE PER GALLON

January 1 to March 31	$168,714
April	209,160
May	219,332
June	242,976
July	407,092
August 1 to 17	804,440
September 3 to 31	668,492
October 1 to 15, inclusive	353,430
Total	$3,073,631

As production gained from January 1 to August 17, before wells were shut in, the waste of natural gas was concurrent. When wells were again opened under curtailment orders the waste of gas was cut accordingly, and as wells were further curtailed in October the waste became smaller. The wells are now producing under a gas-oil ratio of 350 to 1, and the wells allowed to produce only 125 bbls. per day, each.

TOTAL AMOUNT OF WET GAS PRODUCED FOR THE PERIOD

	Feet
January 1 to March 31	1,297,800,000
April	2,614,500,000
May	3,374,350,000
June	3,738,000,000
July	5,088,650,000
August 1 to 17	5,027,750,000
September 3 to 31	3,713,850,000
October 1 to 15	2,142,000,000
Total	26,997,000,000

As pressures continue to decrease in the field, especially on the eastern side

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 93)

ASSOCIATED OIL CO. PRICES

Associated Oil Co. prices, effective June 20, are as follows:

Ventura Avenue, 32 gravity, 58 cents, with 2 cents added for each degree upward to and including 36 gravity, which is 74 cents.

Kettleman Hills, 36 gravity and above 66 cents.

Potrero, 24 gravity, 69 cents, with 2 cents added for each degree upward to 24 gravity, which is 69 cents.

UNION OIL CO. OF CALIFORNIA

Crude Oil Prices for Its Purchases at the Well for Crude Produced in Strict Accordance With the Production Allocations Made by the California Statewide Curtailment Committee Effective 7 a.m., June 20, 1931

(All gravities above those quoted take highest price for that field)

Gravity °A.P.I.	Signal Hill	Alamitos Heights, Seal Beach	Huntington Beach	Athens, Rosecrans, Dominguez	Torrance	Santa Fe Springs	Playa Del Rey*	E. Coyote, Richfield	Montebello	Santa Paula	Orcutt	Coalinga	Lost Hills	McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills	Gravity °A.P.I.
11-13.9	....	....	....	....	....	....	....	....	....	....	....	....	....	$.50	11-13.9
14-14.9	$.65	$.65	$.65	....	$.65	....	....	$.55	$.65	$.65	$.55	$.55	$.55	.55	14-14.9
15-15.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	15-15.9
16-16.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	16-16.9
17-17.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	17-17.9
18-18.9	.65	.65	.65	....	.65	....	....	.65	.65	.65	.55	.55	.55	.55	18-18.9
19-19.9	.65	.65	.65	....	.65	....	$.65	.65	.65	.65	.55	.55	.55	.55	19-19.9
20-20.9	.65	.65	.65	....	.65	....	.65	.65	.65	.65	.56	.55	.55	.55	20-20.9
21-21.9	.65	.65	.65	....	.65	....	.66	.66	.65	.65	.57	.55	.57	.55	21-21.9
22-22.9	.65	.65	.65	....	.66	....	.67	.67	.65	.65	.59	.55	.59	.56	22-22.9
23-23.9	.67	.67	.67	....	.67	....	.68	.68	.65	.65	.61	.55	.60	.58	23-23.9
24-24.9	.69	.69	.69	$.69	.68	$.65	.69	.69	.65	.66	.63	.55	.62	.61	24-24.9
25-25.9	.71	.71	.71	.71	.70	.65	.70	.70	.66	.68	.65	.57	.64	.64	25-25.9
26-26.9	.73	.73	.73	.73	....	.65	....	.72	....	.70	.67	....	.66	.66	26-26.9
27-27.9	.75	.75	.75	.75	....	.68	....	.74	....	.72	....	....	.67	.68	27-27.9
28-28.9	.77	....	....	.77	....	.71	....	....	....	.74	....	....	.69	.71	28-28.9
29-29.9	.79	....	....	.79	....	.73	....	....	....	.76	....	....	.71	.74	29-29.9
30-30.9	.81	....	....	.81	....	.75	....	....	....	.78	....	....	.72	.76	30-30.9
31-31.9	....	....	....	.83	....	.78	....	....	....	....	....	....	....	....	31-31.9
32-32.9	....	....	....	.85	....	.80	....	....	....	....	....	....	....	....	32-32.9
33-33.9	....	....	....	.87	....	.82	....	....	....	....	....	....	....	....	33-33.9
34-34.9	....	....	....	.89	....	.84	....	....	....	....	....	....	....	....	34-34.9

*Subject to a gathering charge of 5 cents per barrel.

of the field where the sand is the thinnest, and where many wells have already gone dead and have had to have pumping equipment installed for producing them, and as companies are reassured that the field is not to be dissipated within a short time as it first appeared, more gasoline plants can be expected to be constructed in the district. Companies which have intimated that they might build plants, and which have made a survey of the natural gas and gasoline situation are: Sinclair Oil & Gas Co., Stanolind Oil & Gas Co., Magnolia Petroleum Co., Roeser and Pendleton, Inc.

Several meetings have been held in Dallas in regard to the possibilities of unitizing the field into several different areas in regard to natural gas production and sale to companies which might construct plants. So far these meetings have not accomplished much material good, but may be considered as extremely interesting from the viewpoint of preservation of millions of feet of gas which the companies realize should be effected.

ANTITRUST LAW SUITS ARE FILED IN TEXAS

(Continued from Page 13)

business and "conceived the idea of a trust in the marketing and distribution of gasoline and lubricants. On June 1 these companies entered into the combination."

The agreements, the State maintains, were to create restrictions on the proportion for market and the marketing of petroleum and its products; to fix the price of petroleum and its products; to prevent and lessen competition; to fix the retail price of petroleum, its products and articles of merchandise, including tanks, pumps and other filling station equipment; to make agreements to fix the price and restricting distribution of tanks, pumps and other filling station equipment and to limit the output of station equipment.

GOVERNOR WILL ACT ON ACREAGE BASIS

AUSTIN, Tex., Nov. 17.—Gov. Ross S. Sterling indicated, when he returned to Austin Tuesday morning, that he expects definite action during the week toward the shifting of the state production limit regulations in East Texas to or toward the acreage-basis plan as recommended to him by a committee of oil operators two weeks ago.

The governor said he believed a plan "will be worked out," through the co-operation of the oil men who at first opposed the change, from a well-basis to a 20-acre unit basis, and that the action was probable during the week.

Code of Ethics

The American Petroleum Institute, the State alleges, was to work with the companies in the agreement, and after a series of meetings of officials, perfected a "code of practices for the marketing of refinel petroleum products," which the institute incorporated in a "code of practices" and presented to the Federal Trade Commission for approval. The code, the suit alleges, was "for the purpose of hiding its true motive," and it sought approval by the commission for "the purpose of misleading the public and to attempt to deceive officers of the various states."

In July, 1929, the commission attempted to give approval to the so-called "code of ethics." This approval, the attorney general says, was without authority of law and without effect; it could not and did not authorize a violation of the antitrust laws of Texas. It could not give the stamp of legality to the so-called "code of ethics," which the suit charges was "nothing more than an agreement and conspiracy in restraint of trade and in violation of antitrust laws."

After a meeting in Dallas, following approval of the code, in 1929, "the defendants, to carry out their conspiracies in addition to the machinery already set up, employed the facilities of the Texas Petroleum Marketers' Association and contributed to both the American Petroleum Institute, the code committee and the Texas Petroleum Marketers' Association large sums for upkeep and operations," the complaint says. L. F. Flynn, secretary of the code committee and general manager for the Texas Petroleum Marketers' Association, was to exchange information between the defendants for carrying out the rules, the State maintains.

The petition says that after the Standard Oil Co. of New Jersey was convicted of violations of antitrust laws in 1913 and evicted from Texas, it, "in order to evade laws governing corporations, to escape tax law liabilities and to avoid jurisdiction of state courts, resorted to the scheme of taking over a subsidiary, the Humble Oil & Refining Co., in 1919, acquiring approximately 65 per cent of the stock."

"The Humble Oil & Refining Co. was assigned Texas and other sections of the South in which to operate for the benefit of its parent corporation, and no other controlled or subsidiary organization of Standard Oil Co. of New Jersey competes with Humble in its territory," the petition declares. "Through the Humble company, the Standard Oil Co. of New Jersey has carried out conspiracies in restraint of trade and in violation of the antitrust laws." W. S. Farish of Houston, president of the Humble and a director of the Standard of New Jersey, "communicated back to directors of Humble the results of conferences."

In the case of the Standard of New York, the same purpose is given for the creation of the Magnolia Petroleum Co., of which E. R. Brown of Dallas is president and also a member of the board of directors of the Standard of New York. The Pasotex Petroleum Co. was given as a subsidiary of the Standard of California and the Shell Petroleum Corp. was listed as the subsidiary in Texas of the Shell Union Oil Corp., with the same accusations.

The petition says acts of the defendants constitute the following violations of Texas' antitrust laws:

Created restrictions in trade and commerce; fixed prices; lessened competition; fixed prices of equipment; the output of filling station equipment and petroleum products and the amount of work which might be done in the preparation of the products for the market; caused the defendants and others to abstain from continuing in the business of marketing and purchasing petroleum products; prevented competition among the defendants and brought the direction of the affairs of all the defendants under the same management and control.

President Beaty's Comment

Amos L. Beaty, president of the American Petroleum Institute, says:

"The suit brought by the attorney general of Texas is not easy to understand. As reported by the press, it is an attack upon the petroleum industry of the United States and the Federal Trade Commission as well.

"The code of marketing practices was promulgated by the Federal Trade Commission in this instance just as the commission had promulgated similar codes for more than 100 other industries. This was after full public hearings and in accordance with the regular procedure of the commission.

"The code has been accepted by more than 16,000 members of the industry. The acceptance in each instance was filed directly with the Federal Trade Commission. In the early part of this year the entire matter was reviewed by the commission, another public hearing was held and the code was again approved.

"The purpose of such codes is to control irregularities in business and promote fair trade practices."

"If the ouster suits should have been filed against anyone, they should have been filed against the Federal Trade Commission, which has approved our marketing practices code," said E. B. Reeser, retiring president of the American Petroleum Institute. "We have been not only baptized but confirmed by the trade commission."

Mr. Reeser added that whatever effect the ouster action might have on the practices code in Texas, it would have no bearing on the oil industry in other states.

Harry F. Sinclair, chairman of the board of the Sinclair Consolidated Oil Corp., said: "Knowing the political and the actual trade situation in Texas, we do not take the ouster suit seriously and we do not believe other oil companies will. It is not reasonable to believe that 15 oil companies would be engaged in violation of the antitrust laws."

Lieut. Col. Cicero I. Murray, chairman of the Oil States Advisory Committee and cousin of Governor Murray of Oklahoma, said he did not think there was anything to the ouster suits.

"Attorney General Allred wants to be governor of Texas," he said.

Allred's Reply

Attorney General Allred of Texas, replying to statements attributed to E. B. Reeser and Amos L. Beaty, president of the institute, that the acts of the major oil companies had been approved by the Federal Trade Commission, said:

"The agreements entered into by the defendants are in violation of both the state and federal antitrust laws. The Federal Trade Commission has no authority to approve or authorize any violations of the law. Mussolini or the king of England would have as much power to authorize the violation of laws in Texas as the Federal Trade Commission would. This is not the first time that a bunch of Republicans in high federal office have approved of violations of the law. The looting of Teapot Dome was accomplished with approval of federal authorities.

"In my judgment, if the Federal Trade Commission had been performing the duties placed upon it by law they would have been prosecuting the defendants for violations of the law rather than encouraging them as they have in this instance."

Trade Commission View

WASHINGTON, D. C., Nov. 16.—Members of Federal Trade Commission denied the allegation of Attorney General Allred of Texas that it acted unlawfully in approving trade practices for the oil industry.

Commissioner March asserted the commission was wholly within its legal rights approving the practice rules. Other members joined him in asserting there was nothing in the code that would justify unlawful practices by the oil companies.

It was reported the trade commission now is investigating certain practices of companies in relation to the leasing-license system of operating filling stations. Should this system, under which the companies acquire possession of a filling station and employ its occupant as their agent or licensee, be found by commission representatives to be an infringement, hearings may be held by the trade group and the practice might be prohibited.

The commission pointed out that the petroleum rules attacked by the Texas official were revised during the past summer to avoid any possibility of their appearing to sanction violation of antitrust laws.

DISTRIBUTE LIQUEFIED GAS WITHOUT MIXING

(Continued from Page 90)

minute and care should be taken in the selection of a pump to get one that will withstand a high suction pressure without failure or leakage as it is possible to have a pressure of 150 pounds on the liquid in the car due to heating en route.

From the pump, the liquid goes to a 6-inch header and then to the tanks with filling connections located in the bottom. This connection serves a double purpose as the header is used as a drip collector to collect any water that might settle out of the liquid.

Capacity of Tanks

The capacity of the tanks is determined from the estimated usage, the size of the tank car and the time necessary to replenish the supply. The reserve tank should be of ample capacity to take care of the peak load requirements for a period equivalent to the time elapsed between order of liquid and delivery with leeway to take care of emergencies. Two or three tank cars can be used then for the sake of flexibility of operation.

The tanks found most satisfactory for butane and propane storage are all welded horizontal tanks with two-point suspension which allows them to expand and contract freely. This is an important point to note as the top part of the tank is filled with vapor and will become hot from the sun's rays while the lower part will be cool due to the lower temperature of the liquid. This uneven temperature condition tends to make the tank bow and should be allowed for. Tanks are designed for 150 pounds working pressure and are equipped with pop valves to release at that pressure. Tanks are also equipped with conventional gauge glasses.

During normal operation of the plant liquid is drawn off one tank with the liquid outlet closed on the other two tanks. The pressure on the tanks forces the liquid to the vaporizor which consists of a vertical heat exchange with a level control mounted in the top section. The heating medium is created from a small hot water boiler equipped with a thermostatic control and piped up for natural circulation, no pump being necessary. As the liquid is heated it vaporizes and pressure on the heat exchange may reach as high as 300 pounds per square inch. A check valve is installed in the liquid line to prevent blowing back into the tanks. This pressure normally will adjust itself against the tank pressure and become an automatic feed control. The vapor is then reduced to 25 pounds per square inch by a deadweight reducing valve from where it enters a header into which are connected two low pressure regulators in parallel. These regulators reduce the pressure from 25 pounds per square inch to 11 inches of water the line pressure. Either of the low pressure regulators has capacity to take care of a peak load so the plant will operate successfully if one goes out of order. From the low pressure regulators the gas goes through the master meter into the mains for distribution to the ultimate consumers.

Safety Features

To insure safety and prevent any liquid entering the distribution system a level control is located in the top of the vaporizor. Should the water heater fail the liquid level in the vaporizor will lift the float on the control, which in turn shuts off a diaphragm valve in the liquid line. If the boiler remained shut down, service to the distribution system would be discontinued. To prevent this a vapor connection from one tank is left open at all times. This connection normally is kept closed by a regulating valve set to operate from the 25-pound line. This regulator is so set that if the pressure on the primary reduction falls below 24 pounds it will open, thus feeding the system with vapor from the tanks until the trouble on the liquid feed is corrected. This same vapor connection insures a constant supply in case the tank from which the liquid is being drawn goes dry.

The gas that enters the distribution system holds at a constant pressure and the system is designed for a 2-inch pressure drop at the point of maximum distance from the plant on peak loads. This obviates the necessity of regulators at the individual meters. The entire distribution system is designed according to gas company practice and consists of 13 miles of 6, 4, 3 and 2-inch mains with ¾"x1" services. Meters calibrated to read directly in units of 550 B.t.u. gas are installed on each service.

From the description of the plant just outlined the simplicity of the operation is evident and the possibilities of the use of such systems appear to be limited only by the economic return that can be realized. To insure the necessary load the price of gas must be within reason. To deliver gas at a reasonable cost it is essential that plant and distribution investment be kept at a minimum, that the

manufacturers of natural gasoline consider the competition that propane and butane meet, price their product to sell and that the railroad rates be adjusted downward to put those products on a basis comparable with fuel oil instead of gasoline. If such things are accomplished along with domestic consumption a fair commercial load can be developed by offering gas at rates that will justify the switchover from other fuels to gas.

OKLAHOMA REFINED MARKET IS QUIET

(Continued from Page 12)

his refinery processing and increase the knock rating of his gasoline at a lower cost than the proposed charge for using the new fluid. It is pointed out that with the minimum charge the octane rating would only be increased three octanes. Most refiners are planning on increasing the octane rating of their poorest gasoline around 10 octanes to secure a regular grade and this would cost one-half cent under the new contract. It is said by both refiners and manufacturers of refinery equipment that the same results can be obtained at a lesser cost by installing new processes or by revamping those already in operation.

Marketing Angle

Those who are inclined to view the new gasoline with favor point out that it is necessary to consider the relative cost of merchandizing as well as manufacturing. Presumably the Ethyl corporation will aid its licensees in selling the new brand with extensive advertising programs as it has in the case of Ethyl Gasoline. By national advertising a demand is created and in the case of Ethyl Gasoline the total cost has been generally less than the cost per gallon of manufacturing and selling the premium product of an individual company.

There are several other slants to the problem. Some believe that the new brand will satisfy the requirements of most of the automobile owners now buying premium gasolines and what is gained in the sale of new motor fuel will be lost in the sale of Ethyl Gasoline and other premium grades. Others state that too much emphasis is being placed on antiknock gasolines with their higher costs and the result will be the public acceptance of a cheaper grade, which will work a hardship on many refiners.

It is understood that an attempt will be made to determine the attitude of a large number of refiners in regard to the "Q" brand gasoline and if a definite consensus of opinion can be obtained this may result in important changes in the specifications of the new grade before it is introduced next spring. An announcement on Tuesday indicated that the Ethyl corporation would not offer contracts to licensees until more was known regarding the industry's attitude.

Gasoline and Naphtha

The weak spots in the Oklahoma gasoline market were confined to a half dozen operators with plants located in the Oklahoma City Field, North Texas and Texas Panhandle. Gasoline meeting U. S. Motor specifications was sold direct to the trade as low as 4¼ cents in Oklahoma and from other areas on the same basis. The material was being sold direct by refiners and by brokers. A majority of the refiners were continuing to quote 4½ cents to the trade with prices up to 5 cents for the higher octane gasolines. Business at these levels was slow and a few refiners will require more orders within the next few days or they will be compelled to meet the lower prices.

The same situation is found in the higher gravities where the prices are from one-eighth to one-fourth cent lower than last week.

These higher gravities are more freely offered than they were over the previous month. Due to the slower demand for the U. S. Motor grade more refiners are willing to cut the lower endpoint material. Usually the low endpoint and higher gravity gasolines have a higher knock rating and since most refiners are asking one-fourth to three-fourths cent premiums for their high octane U. S. Motor gasoline, there have been more buyers for the 390 to 360 endpoint gasolines. The naphtha situation is unchanged.

Kerosene and Furnace Oil

Although there were reports in the trade that kerosene prices were weaker buyers willing to place orders for immediate delivery were unable to find the low-priced material. Enough export and domestic business has been placed for delivery over the month that a majority of refiners are sold up. The low of 2⅛ cents to the trade for 41-43 water white kerosene is being maintained with the higher gravity special grades selling up to 2⅜ cents.

A similar situation obtains in furnace oils. Warm weather is retarding spot business and slowing up contract shipments in some cases. However, no distress material is making its appearance Prices for the better grades of furnace oils start at 1⅝ cents for a 32 gravity, zero to 10, under 190 flash, and dark color grade to 2 cents for the 38 gravity, zero, under 175 flash, prime or amber color grades. The higher gravity fuel oils, some of which contain considerable overhead material, are also strong. For material that is suitable for blending or use direct as furnace oil the prices range from 40 to 55 cents per barrel, depending largely on the gravity and pour test. High cold test fuels are selling from 5 to 15 cents a barrel under the low cold test grades.

Natural Gasoline

Grade AA was sold on Tuesday at a low of 4⅜ cents, a decline of one-eighth cent. This was for immediate delivery and quotations as low as 4⅛ cents were reported for delivery over the month. What happens to the natural gasoline market over the remainder will depend on the orders placed within the next few days. Many manufacturers are sold up until the twentieth of the month, but will need additional orders over the last 10 days. Prices in Texas continue one-fourth cent under the Oklahoma market.

Lubricants

The trouble in the lubricating oil markets appears to be largely in the export situation. There has been a seasonal decline in the domestic market but this was expected and provided for in current operations and storage programs.

The export market has suffered, due in part to the changes in rates of exchange brought about by the decline in the pound sterling. Foreign refiners have not advanced their prices to offset this change and this situation is held responsible for the recent decline in coastal prices, including Pennsylvania grade material. This condition may necessitate some revision downward in Mid-Continent prices on lubricants, particularly bright stocks.

The range on wax prices was not changed during the week.

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Late Fields

(Continued from Page 24)

has set Friday morning for the hearing on petitions of two oil companies for a permit to take potentials on producers in the Oklahoma City Field.

In Stephens County, J. C. Chambers' No. 1 A. Dare, SE cor. NW SE, Section 2-2s-8w, was swabbing 60 bbls. of oil from sand at 1,356-61 feet. George Pace and others' No. 4 McMasters, NW cor. NE, Section 13-2s-8w, is being plugged and abandoned at a total depth of 2,035 feet. H. J. Brown's No. 2 Hightower, SW cor. SE SE NE, Section 15-3s-5w, found showings of oil and gas at 65-94 feet and at 405-28 feet and was drilling at 850 feet.

A new location has been made on a community block in Lincoln County on approximately 960 acres. The location was made in the C SW NW, Section 17-14-5. The Barnsdall Oil Co. will be in charge of the drilling of the test. Other companies interested in the test include Prairie Oil & Gas Co., Producers & Refiners Corp., Carter Oil Co., Pure Oil Co., Coline Oil Co., Stanolind Oil & Gas Co. and Tom Slick Oil Co.

KANSAS

There were 14 new operations reported for Kansas for the week ending November 14. Sedgwick County leads with five new operations. These were old chat producers being drilled to the deeper pay horizons. McPherson County was next with three new operations, Greenwood County had two, and Russell, Ellsworth, Butler and Cowley Counties each had one.

EAST TEXAS

Cranfill & Reynolds' No. 1 Rash in Upshur County, which was regarded as a dry hole last week but which on a little deeper drilling developed oil that filled 27 fourbles of drill pipe, was reported to have made two small flows on Monday.

GULF COAST

HOUSTON, Tex., Nov. 17.—Gulf Production Co. has completed its No. 33 Taylor, south flank of Pierce Junction, flowing 850 bbls. of pipe line oil through chokes on the first 24-hour gauge. Two joints of 6⅝-inch screen were set in the sand at total depth of 3,836 feet. The well extends production on that flank 300 feet east.

Nat Hunter Producing Co.'s No. 2 Tarbutton, east flank of Barbers Hill, has been completed flowing 900 bbls. of pipe line oil, 24 gravity, from sand at a total depth of 3,526 feet. The sand apparently is a new Miocene lens. The well is at the north end of the present active development in the recently opened 4,400-4,500-foot horizon located upon the dome inside the circle of deep Oligocene production.

Louisiana Gas & Fuel Co., a subsidiary of the United Gas System, apparently has proved up a new field in Terrebonne Parish, Louisiana, in its No. 2 Minor estate, which on a drill stem test showed an estimated 2,000,000 feet of gas through an open end tester. The well is in sand topped at 3,878 feet and cored 4 feet in to 3,882 feet. Casing is being moved in to test. Location is 3,480 feet south and 1,980 feet east of the northwest corners of Section 3-18s-16e, about 7 miles southwest of the town of Houma. This is approximately 15 miles to the northwest of the old Houma gas field, which, though considerable gas has been found, never has proved out to any great commercial extent because of salt water intrusion.

No. 2 Minor is the second test of the Louisiana Gas & Fuel Co., the first being No. 1 Minor, some 6 miles northeast, which was abandoned early this year as dry at 6,500 feet. The area has been worked both by torsion balance and seismograph, which have given indications of a salt dome or well-defined high. The large block is controlled by the United Gas System.

SEEK EAST TEXAS CONNECTIONS

FORT WORTH, Tex., Nov. 17.—Gulf Pipe Line Co., Shell Pipe Line Co., and Empire are seeking more connections in East Texas, the demand for crude increasing in that district. Magnolia Pipe Line Co. is laying 4 miles of 8-inch line in Gregg County to remove congestion in gathering system in this area.

East Texas steel storage as of November 1, showed capacity of 9,430,500 bbls; stock 3,040,715 bbls.; room 6,389,785 bbls.

COMMITTEE URGES BAN ON OIL IMPORTATIONS

Restriction of crude oil imports to correspond with curtailment programs in the United States, a tariff of not less than $1 a barrel on crude imports and entire prohibition of importation of refined products are urged in resolutions adopted by the Oil States Advisory Committee, meeting in Chicago November 10. Members of the committee present were Cicero I. Murray, Oklahoma, chairman; Marvin Lee, Kansas; Warwick M. Downing, Colorado; Carl M. Cox, Wyoming; Van S. Welch, New Mexico; Scott Heywood, Louisiana, and Kennor McConnell, Ohio.

WINS WELDING SUIT

A decree was recently entered in the federal court upholding the A. O. Smith Corp. in its defense against the Morton automatic arc welding patents. The winning of the suit by the Smith corporation affects the entire welding industry and tends to free it from threatened injunction and royalty payments under these patents. The Smith corporation is now considered to be one of the greatest electric welding concerns and the processes developed and patented by it have attracted attention from all over the world. The welding experts at the corporation are recognized as outstanding authorities on the subject and considerable credit is due them in their untiring efforts to advance the welding industry and to protect it from those who wrongfully demand tribute of it.

GULF COAST MARKET

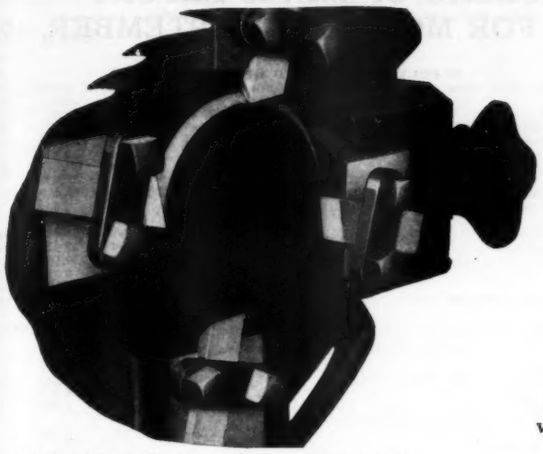
HOUSTON, Tex., Nov. 16.—Slight improvement in bulk fuel with continued gradual strengthening of gasoline was reflected in Gulf Coast refinery markets the past week.

TANK WAGON CHANGES

(Continued from Page 94)

19 cents November 12. On November 11 these prices were reduced to 16 cents each in Memphis, Tenn. On November 7 these prices were reduced to 15.5 cents each in Alexandria, La., and to 14 cents each in Lake Charles, La.

Magnolia Petroleum Co. advanced the gasoline tank wagon and station prices throughout Texas 1 cent November 7. On November 4 these prices were advanced 1 cent in Oklahoma but on November 10 were reduced in Muskogee to 10 and 12 cents. These prices were also advanced in Arkansas but only one-half cent, and made effective November 5.



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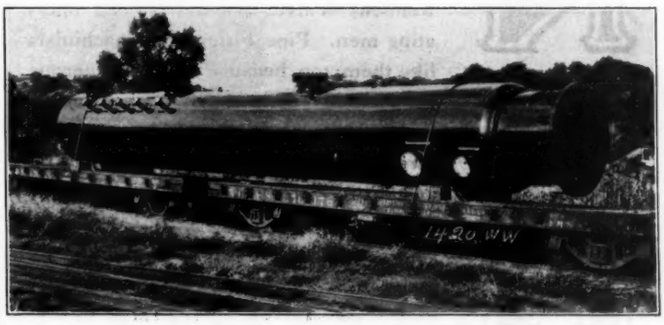

High Pressure Fusion Welded Bubble Tower.

H-W-W "Hy Pressure" Welded Drums and Boilers conform to ASME CODE. Welded Seams are X-RAYED. Drums are furnace annealed. Integrity of Weld commends these vessels where requirements are exacting.

THE HEDGES-WALSH-WEIDNER CO.
CHATTANOOGA, TENN.
Mayo Bldg., Tulsa 200 Madison Ave., New York

VALVES
PIPE FITTINGS
FIRE HYDRANTS

K E N N E D Y

WHEN a Kennedy Valve is to be opened or closed, it operates smoothly, easily and dependably. Ample handwheel leverage, self-cleaning seats and quick-release disc mechanism are some of the features that have made Kennedy Valves popular among operating men. Pipe Fitters and machinists like them, too, because of their generous proportions and sturdy construction, and because their accurately machined threads and flanges help to speed up pipe fitting jobs.

Kennedy Products for the oil industry include 400-lb., 700-lb., 1000-lb. and 1600-lb. test gate valves, a wide range of low pressure and extreme pressure gate, globe and angle valves for practically every service, and a complete line of standard cast iron flanged fittings and malleable iron screwed fittings.

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THE KENNEDY VALVE MFG. CO., ELMIRA, N.Y.

WAREHOUSES: New York, 128-132 White St.; Chicago, 1335-1337 So. Clinton St.; San Francisco, 448-450 Tenth St.
SALES OFFICES: New York, Philadelphia, Cleveland, Chicago, Atlanta, Salt Lake City, El Paso, Los Angeles, San Francisco, Seattle

U. S. BUREAU OF MINES REPORT FOR MONTH OF SEPTEMBER, 1931

SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke, and asphalt in thousands of barrels of 42 U. S. gallons.)

	Sept., 1931	Aug.,* 1931	Sept., 1930	Jan.-Sept. 1931	Jan.-Sept. 1930
NEW SUPPLY:					
Domestic production:					
Crude petroleum	63,636	68,418	71,216	631,171	690,189
Daily average	2,121	2,207	2,374	2,312	2,529
Natural gasoline	3,062	3,179	4,152	32,740	39,676
Benzol	138	145	202	1,519	2,115
Total production	66,836	71,742	75,570	665,430	731,942
Daily average	2,228	2,314	2,519	2,437	2,681
Imports:					
Crude petroleum	3,426	2,702	5,803	35,225	47,871
Refined products	3,468	3,224	3,614	29,411	33,572
Total new supply, all oils	73,730	77,668	84,992	730,066	813,385
Daily average	2,458	2,505	2,833	2,674	2,979
Increase in stocks, all oils	†13,909	†14,471	†8,439	†45,245	†11,105
DEMAND:					
Total demand	87,639	92,139	93,431	775,311	824,491
Daily average	2,921	2,972	3,114	2,840	3,020
Exports:					
Crude petroleum	2,296	2,867	1,961	19,637	18,434
Refined products	7,816	8,713	8,753	76,742	103,491
Domestic demand	77,527	80,559	82,717	678,932	702,566
Daily average	2,584	2,599	2,767	2,487	2,574
Excess of daily average domestic production over domestic demand	‡356	‡285	‡238	‡50	107
STOCKS (end of month):					
Crude petroleum:					
East of California	329,098	340,102	376,763	329,098	376,763
California§	137,373	136,033 §138,304	144,137	137,373	144,137
Total crude	466,471	476,135 §478,406	520,900	466,471	520,900
Natural gasoline¶	3,088	2,299 ¶3,214	2,534	3,088	2,534
Refined products¶	153,667	156,300 ¶155,515	154,958	153,667	154,958
GRAND TOTAL STOCKS, ALL OILS	623,226	634,734 §637,135	678,392	623,226	678,392
Days' supply	213	214	218	219	223
Bunker oil (incl'd above in domestic demand)	3,094	3,442	4,333	33,590	38,643

*Revised. †Decrease. ‡Deficiency. §Includes residual fuel oils. ¶California placed on new basis. Revised figures: Light crude, 40,495,000 bbls.; natural gasoline at refineries, 2,062,000; gasoline, 13,031,000 bbls.; gas oils, 4,656,000 bbls.; unfinished oils, 8,486,000 bbls. ¶Natural gasoline held by refiners formerly included under refined products, now combined with natural gasoline at plants.

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 U. S. gallons)

EAST OF CALIFORNIA:	September	August	September
At refineries by location:			
East Coast: Domestic	9,629	9,739	10,396
Foreign	2,983	2,981	3,643
Appalachian	2,190	2,176	2,639
Indiana, Illinois, Kentucky, Michigan, etc.	3,246	3,089	2,979
Oklahoma, Kansas and Missouri	4,850	5,144	5,271
Texas: Inland	1,838	2,001	1,982
Gulf Coast: Domestic	6,592	6,808	8,971
Foreign	222	191	317
Arkansas and Inland Louisiana	632	692	984
Louisiana Gulf Coast: Domestic	3,973	3,878	5,736
Foreign	612	642	769
Rocky Mountains	1,591	1,680	1,823
Total	38,358	39,021	45,445
At refineries by origin:			
Pennsylvania Grade	1,926	1,914	2,462
Other Appalachian (including Kentucky)	706	631	933
Lima, northeast Indiana and Michigan	242	205	282
Illinois and southwestern Indiana	125	112	96
North Louisiana and Arkansas	2,691	2,584	5,259
West Texas and southeast New Mexico	3,479	3,399	4,844
Oklahoma, Kansas, North Texas, etc.	18,436	18,712	17,495
Gulf Coast: Grade A	1,669	1,725	4,253
Grade B	3,676	4,241	3,492
Rocky Mountains	1,591	1,680	1,817
California	....	....	6
Foreign	3,817	3,814	4,788
Total	38,358	39,021	45,445
Pipe line and tank farm:			
Pennsylvania Grade	4,641	4,904	5,633
Other Appalachian (including Kentucky)	947	920	913
Lima, northeast Indiana and Michigan	1,444	1,416	1,562
Illinois and southwest Indiana	9,862	9,866	10,091
North Louisiana and Arkansas	18,270	18,809	20,042
West Texas and southeast New Mexico	37,849	38,474	46,396
Oklahoma, Kansas, North Texas, etc.	175,119	182,941	196,277
Gulf Coast: Grade A	4,071	4,430	7,691
Grade B	9,296	9,639	11,756
Rocky Mountains	23,341	23,432	24,299
Total	284,840	294,821	324,795
Total refinery, pipe line and tank farm	326,198	333,852	370,240
Producers'	5,900	6,250	6,527
Total crude east of California	329,098	340,102	376,767
CALIFORNIA: Light	40,406	38,324	40,433
		*40,495	
Heavy (including fuel)	96,967	97,809	102,705
Total crude (including fuel oil in California)	466,471	476,135	520,900
		*478,406	

*New basis to compare with succeeding months.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, SEPTEMBER, 1931*

	Completions: Oil	Gas	Dry	Ttl. initial production (bbls.)	Av. initial production (bbls.)	Drlg. Sept. 30
Texas	322	10	89	57,000	200	881
East Texas	287	...	17	40,100	100	510
Gulf Coast	8	1	11	5,600	700	52
West Texas	5	...	2	700	100	70
California	11	...	15	7,800	700	147
Kettleman Hills	1	...	...	5,400	5,400	9
Long Beach	...	...	2	....	....	17
Playa del Rey	1	...	1	50	50	2
Oklahoma	22	12	27	93,400	4,200	213
New Mexico	1	...	4	50	50	44
Other states	89	125	98	17,250	200	1,037
Total United States	445	147	233	175,600	400	2,326

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN UNITED STATES*

(Thousands of barrels of 42 U. S. gallons)

	Sept., 1931	Aug., 1931	Sept., 1930	Jan.-Sept., 1931	Jan.-Sept., 1930
Gasoline	1,552	854	1,634	10,817	14,585
Natural gasoline	75	152	72	1,248	1,001
Kerosene	....	30	....	194	180
Gas oil	....	286	272	1,319	2,674
Diesel oil	....	...	...	107	208
Fuel oil	....	...	3	2	27
Lubricants	2	4	1	69	112
Asphalt	1	1	2	13	15
Total	1,630	1,327	1,983	13,769	18,802

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Sept., 1931	Aug., 1931	Sept., 1930	Jan.-Sept., 1931	Jan.-Sept., 1930
Oil	445	441	781	4,425	9,577
Gas	147	135	289	1,495	2,078
Dry	233	218	542	2,978	5,207
Total	825	794	1,612	8,898	16,862

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM AND MAJOR REFINED PRODUCTS*

(Thousands of barrels of 42 U. S. gallons)

	Sept., 1931 Total	Sept., 1931 Daily av.	August, 1931 Total	August, 1931 Daily av.	Jan.-Sept., 1931	Jan.-Sept., 1930
CRUDE PETROLEUM:						
Imports	3,426	114	2,702	87	35,225	47,874
From Mexico	515	17	493	16	6,001	7,491
From Venezuela	2,006	67	1,708	55	19,467	27,670
From Colombia	767	25	438	14	8,600	10,776
From other countries	138	5	63	2	1,167	1,937
Exports:						
Domestic crude oil	2,296	77	2,867	93	19,637	18,434
To Canada	1,767	59	1,754	57	14,770	14,717
To other countries	529	18	1,113	36	4,867	3,716
Shipments	....	...	....	..	.....	1
Foreign crude oil	....	...	....	..	.....	....
REFINED PRODUCTS:						
Gasoline:						
Imports	1,256	42	1,244	40	11,061	13,264
Exports†	3,355	112	4,210	136	35,937	51,177
To United Kingdom	636	21	896	29	10,438	15,311
To France	339	12	1,143	37	4,948	7,087
To Canada	279	9	278	9	2,320	3,362
To other countries	1,823	61	1,795	58	16,965	24,458
Shipments	278	9	98	3	1,266	959
Kerosene:						
Exports	1,074	36	1,144	37	9,557	13,143
To China	224	7	167	5	1,445	2,125
To United Kingdom	120	4	150	5	2,010	2,185
To other countries	713	24	814	26	5,965	8,691
Shipments	17	1	13	1	137	142
Gas oil and fuel oil:						
Imports	2,304	73	1,958	63	18,215	19,907
Exports	2,494	83	2,258	73	22,785	28,349
To Japan	449	15	494	16	4,189	4,573
To Chile	196	7	60	2	2,184	3,373
To other countries	1,572	52	1,513	49	14,202	17,437
Shipments	277	9	191	6	2,210	2,966
Lubricants:						
Exports	661	22	864	28	6,146	7,781
To United Kingdom	86	3	226	7	1,258	1,648
To France	155	5	147	5	1,050	1,163
To other countries	416	14	481	16	3,774	4,897
Shipments	4	..	10	..	64	68
Wax (thousands of pounds):						
Imports	1,671	56	2,275	73	22,197	20,075
Exports	21,323	711	20,914	675	194,907	210,208
To United Kingdom	6,458	215	5,126	165	45,267	58,106
To Italy	3,021	101	1,598	52	29,935	32,681
To other countries	11,841	395	14,185	458	119,681	119,395
Shipments	3	..	5	..	24	26

*From Bureau of Foreign and Domestic Commerce. †Includes benzol, 2,000 bbls. in September.

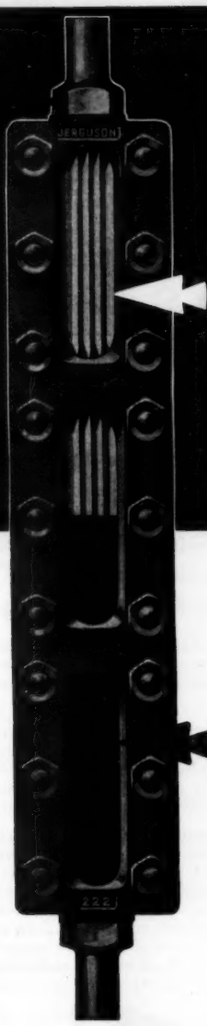
PRODUCTION OF CRUDE PETROLEUM BY STATES

(Thousands of barrels of 42 U. S. gallons)

	Sept., 1931 Total	Sept., 1931 Daily av.	Aug., 1931 Total	Aug., 1931 Daily av.	Jan.-Sept. 1931	Jan.-Sept. 1930*
Arkansas	1,105	37	1,116	36	11,738	15,087
California:						
Kettleman Hills	1,854	62	1,965	63	12,037	3,978
Long Beach	2,379	79	2,354	76	23,176	27,725
Santa Fe Springs	1,871	62	1,931	62	18,534	35,836
Rest of State	9,077	303	9,419	304	88,872	105,804
Total California	15,181	506	15,669	505	142,619	173,343
Colorado	121	4	124	4	1,166	1,254
Illinois	436	15	437	14	3,708	4,524
Indiana:						
Southwestern	67	2	64	2	602	736
Northeastern	3	.....	3	.....	29	42
Total Indiana	70	2	67	2	632	778
Kansas	2,926	97	2,759	89	27,517	31,755
Kentucky	574	19	465	15	4,692	5,716
Louisiana:						
Gulf Coast	692	23	678	22	6,722	6,125
Rest of State	882	29	899	29	9,689	10,829
Total Louisiana	1,574	52	1,577	51	16,411	16,954
Michigan	357	12	289	9	2,484	3,135
Montana	247	8	221	7	2,214	2,568
New Mexico	1,286	43	1,330	43	11,257	6,547
New York	299	10	257	9	2,478	2,852
Ohio:						
Central and Eastern	345	11	290	9	3,191	3,958
Northwestern	93	3	82	3	842	1,022
Total Ohio	438	14	372	12	4,033	4,980
Oklahoma:						
Oklahoma City	647	22	734	24	33,071	26,661
Seminole	1,830	61	2,331	75	36,004	53,901
Rest of State	5,916	197	†6,098	197	64,873	88,941
Total Oklahoma	8,393	280	†9,163	296	133,948	169,503
Pennsylvania	1,077	36	933	30	8,413	9,937
Tennessee	....	.....	.....	.....	5	15
Texas:						
Gulf Coast	3,520	117	3,706	120	37,461	47,090
East Texas	10,290	343	14,268	460	72,056	.....
West Texas	6,050	202	†6,353	215	60,820	84,321
Rest of State	8,204	274	7,712	249	72,790	92,465
Total Texas	28,064	936	†32,039	1,044	243,127	223,876
West Virginia	381	13	347	11	3,323	3,922
Wyoming:						
Salt Creek	699	23	724	23	6,794	7,958
Rest of State	417	14	529	17	4,612	5,478
Total Wyoming	1,116	37	1,253	40	11,406	13,436
Total United States	63,636	2,121	68,418	2,207	631,171	690,189

*Includes Alaska and Utah. †Revised.

This gage shows in *BLACK* and *WHITE*



The EMPTY SPACE shows WHITE

The LIQUID shows BLACK

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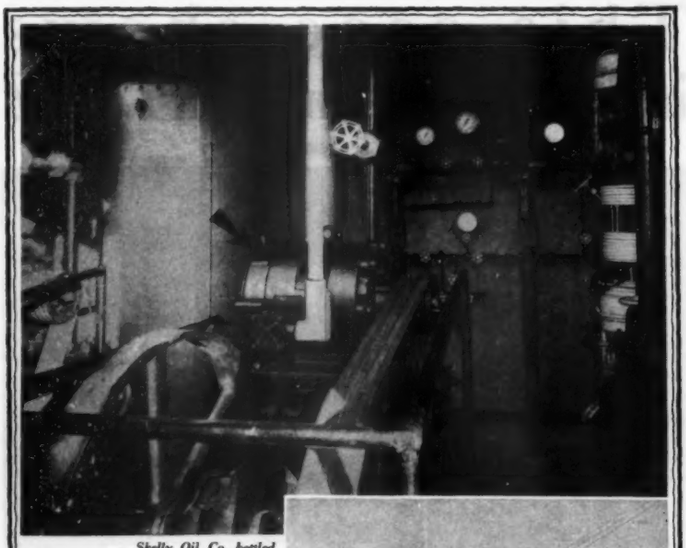
Shows oil level with the full visibility of black on white. Leading oil companies are using it on tanks, towers, stills, etc.

For 25 years these gages have demonstrated safety under highest pressures and temperatures. We furnish them with or without valves for every type of service. Write us for information.

JERGUSON GAGE & VALVE CO.

MYSTIC AVE. AND NORTHERN ARTERY
SOMERVILLE, MASS.



Skelly Oil Co. bottled gas plant, Spencer, Ia

Bottled Gas Plant *Protected* with Louis Allis "Explosion-Proof" Motors

Here is one of the new "Bottled Gas" or "Liquid Carburetion" plants, that are bringing gas service to many towns previously denied this convenience due to being located too far from ordinary sources of supply of natural or artificial gas.

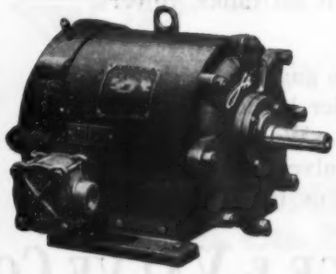
In this plant the finished gas is made by vaporizing liquid butane and carbureting with air from two compressors. The compressors were equipped with Louis Allis Type E "Explosion-Proof" motors... to protect the plant, in case of leaking gas, against the fire hazard incurred where ordinary motors operate in explosive atmospheres.

It was the L.A. Type E motor that first made possible the direct connection of approved motors to compressors, pumps, fans, centrifuges, etc., in explosive atmospheres... without the conventional fire wall. Now L.A. "Explosion-Proof" motors and starters... approved by Underwriters' Laboratories for petroleum and equally hazardous atmospheres...are widely used in this and foreign countries... in chemical plants, dry cleaning plants, and throughout the petroleum industry. Be on the safe side! Follow the leaders! Standardize on

LOUIS ALLIS

Companion Pioneers

The *First* "Explosion-Proof" Fan-Cooled Motor



The *First* "Explosion-Proof" Air-Break Starter

THE LOUIS ALLIS COMPANY
Milwaukee, Wis.

Sales Offices: **Tulsa, Houston, Shreveport, St. Louis, Chicago, Detroit, Cleveland, Pittsburgh, New York, Philadelphia, Boston, Buffalo, Los Angeles, San Francisco... and other principal cities.**

COMPARATIVE ANALYSIS

(Thousands of barrels of 42 U. S. gallons)

	Sept., 1931 Total	Sept., 1931 Daily av.	Aug., 1931 Total	Aug., 1931 Daily av.	Jan.-Sept., 1931	Jan.-Sept., 1930
CRUDE PETROLEUM:						
Runs to stills: Domestic	70,791	2,360	77,268	2,492	637,711	665,517
Foreign	4,303	143	3,404	110	36,148	46,023
Total	75,094	2,503	80,672	2,602	673,859	711,540
Imports	3,426	114	2,702	87	35,225	47,874
Exports	2,296	77	2,867	93	19,637	18,434
MOTOR FUEL:						
Production	37,469	1,249	39,283	1,267	327,118	335,461
Imports	1,256	42	1,244	40	11,061	13,266
Exports	3,355	112	4,210	136	35,937	51,177
Stocks*	35,033	....	37,190 †36,405	....	35,033	38,194
Domestic demand	36,742	1,225	39,459	1,273	307,165	302,615
KEROSENE:						
Production	3,239	108	3,685	119	31,217	38,167
Imports	.....	....	2	....	10	162
Exports	1,074	36	1,144	37	9,557	13,142
Stocks	6,558	....	6,734	....	6,558	7,771
Domestic demand	2,341	78	2,678	86	21,995	26,510
GAS OIL AND DISTILLATE FUELS:						
Production	7,169	239	7,723	249	67,930	59,985
Stocks	21,657	....	21,028 †20,828	....	21,657	19,371
RESIDUAL FUEL OILS:						
Production	21,580	719	22,569	728	196,597	223,946
Stocks‡	23,582	....	23,723	....	23,582	22,109
GAS OIL AND FUEL OIL:						
Production	28,749	958	30,292	977	264,527	283,931
Imports	2,204	73	1,958	63	18,215	19,907
Exports	2,494	83	2,258	73	22,785	28,349
Stocks	45,239	....	44,751 †44,551	....	45,239	41,480
LUBRICANTS:						
Production	2,143	71	2,306	74	20,224	26,737
Imports	2	....	3	....	24	29
Exports	661	22	864	28	6,146	7,781
Stocks	9,224	....	9,289	....	9,224	10,257
Domestic demand	1,549	52	1,753	57	15,849	16,988
WAX (thousands of pounds):						
Production	42,000	1,400	37,500	1,210	339,080	437,640
Imports	1,671	56	2,275	73	22,197	20,075
Exports	21,323	711	20,914	675	194,907	210,208
Stocks	191,158	....	192,198	....	191,158	248,940
Domestic demand	23,388	780	25,090	809	207,804	188,159
COKE (short tons):						
Production	180,000	6,000	177,800	5,735	1,536,900	1,438,500
Stocks	1,515,600	....	1,450,500	....	1,515,600	1,088,800
ASPHALT (short tons):						
Production	325,800	10,860	311,500	10,048	2,321,100	2,611,300
Stocks	339,600	....	331,900	....	339,600	269,600
ROAD OIL:						
Production	682	23	980	32	4,506	4,833
Stocks	314	....	388	....	314	307
MISCELLANEOUS:						
Production	1,202	40	1,228	40	9,293	5,658
Stocks	697	....	719	....	697	554

*Includes motor fuel blends held at natural gasoline plants and in gasoline pipe line systems. †Compares with succeeding months—results from new basis in California. ‡East of California.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM EAST OF CALIFORNIA

(Thousands of barrels of 42 U. S. gallons)

Domestic petroleum by fields of origin:	September, 1931 Total	September, 1931 Daily av.	August, 1931 Total	August, 1931 Daily av.	Jan.-Sept., 1931	Jan.-Sept., 1930
Appalachian:						
Pennsylvania grade	2,178	73	2,170	70	17,180	17,951
Other (inc. Kentucky)	647	21	662	21	6,299	7,518
Lima, N. E. Ind. and Mich.	390	13	403	13	3,225	3,337
Illinois, S. W. Indiana	498	17	547	18	4,658	5,730
Mid-Continent:						
N. La. and Arkansas	2,435	81	1,750	56	24,946	26,667
W. Tex., S. E. N. Mex.	7,811	260	*8,554	286	81,102	97,465
Other (Okla., Kans., N. Tex., etc.)	38,236	1,275	*42,848	1,372	322,454	295,467
Gulf Coast:						
Grade A	1,803	60	1,586	51	18,738	24,825
Grade B	3,760	125	3,998	129	32,152	29,500
Rocky Mountains	1,704	57	1,826	60	17,143	17,653
California	.....	.....	.....	.....	5	201
Total demand	59,462	1,982	64,344	2,076	527,902	526,300
Exports	1,823	61	2,262	73	13,862	12,123
Domestic demand	57,639	1,921	62,082	2,003	514,040	514,185
Foreign petroleum	3,423	114	3,221	104	35,261	49,206
Total domestic demand east of California	61,062	2,035	65,303	2,107	549,301	563,391

*Revised.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS, WITH CLASSIFICATION BY GRAVITY

(Thousands of barrels of 42 U. S. gallons)

FIELD:	September, 1931 Total	September, 1931 Daily av.	August, 1931 Total	August, 1931 Daily av.	Jan.-Sept., 1931	Jan.-Sept., 1930*
Appalachian:						
Pennsylvania Grade	1,927	64	1,700	55	15,846	18,827
Other (inc. Kentucky)	749	25	592	19	6,256	7,573
Lima, N. E. Ind., and Mich.	453	15	374	12	3,355	4,199
Illinois and S. W. Indiana	503	17	501	16	4,311	5,260
Mid-Continent:						
N. La. and Arkansas	1,987	66	2,015	65	21,427	25,916
W. Tex-S. E. N. Mex.	7,291	243	†7,631	256	71,678	90,402
Other (Okla., Kans., N. Tex., etc.)	29,813	994	†33,902	1,084	306,311	293,723
Gulf Coast:						
Grade A	1,380	46	1,369	44	14,055	23,091
Grade B	2,832	94	3,015	98	30,128	30,123
Rocky Mountains	1,520	51	1,650	53	15,185	*17,731
California	15,181	506	15,669	505	142,619	173,343
Total	63,636	2,121	68,418	2,207	631,171	690,185

*Includes Alaska and Utah. †Revised.

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 U. S. gallons)

	Sept., 1931 Total	Sept., 1931 Dy.av.	Aug., 1931 Total	Aug., 1931 Dy.av.	Jan.-Sept., 1931 Total	Jan.-Sept., 1931 Dy.av.
Production	3,062	102	3,179	103	32,740	120
Decrease in all stocks	126	4	557	18	205	1
Total	3,188	106	3,736	121	32,945	121
Blended at refineries	2,601	86	2,475	80	25,459	93
Blended at plants east of California	13	1	13	1	122	1
Run through pipe lines in California	155	5	67	2	823	3
Jobbers' exports, etc.	300	10	700	22	3,300	12
Balance	119	4	481	16	3,241	12
Total	3,188	106	3,736	121	32,945	121

On the Job— ALWAYS

The Chaplin-Fulton Automatic Cut-Off is on the job at all times. It automatically closes the ports of the regulator valve. The valves must be opened by hand before the gas flow resumes.

There is no chance for dangerous explosions, because even though the diaphragm of the regulator should burst, this cut-off would stop the flow of gas immediately.

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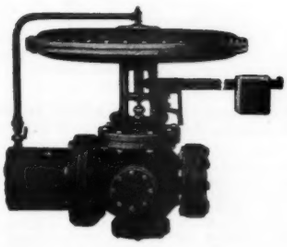

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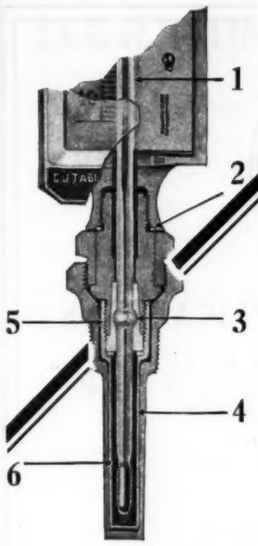

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. . . with NEW Snap Case-Front and Other Improvements

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5. Left handed thread on bulb chamber prevents loosening if case is turned.
6. Mercury filling in bulb chamber surrounding bulb insures split-second transmission of heat.

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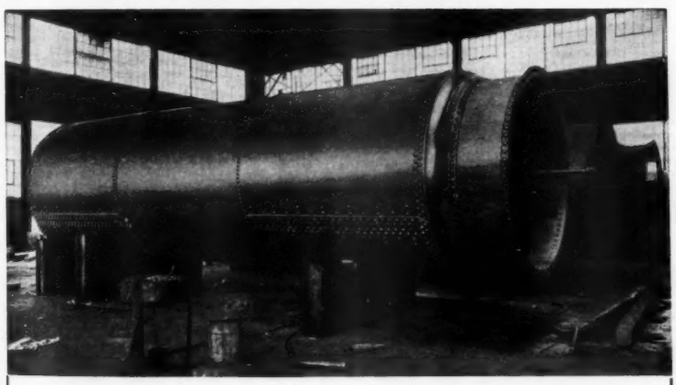

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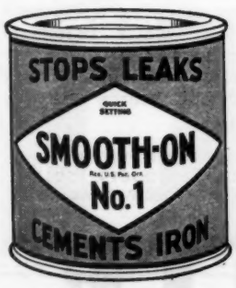

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RUNS TO STILLS AND OUTPUT OF REFINERIES, SEPTEMBER, 1931

(Thousands of barrels of 42 U. S. gallons)

Input—	Crude oil: Domestic	Crude oil: Foreign	Crude oil: Total	Unfinished oils rerun	Natural gasoline	Total input
East Coast	10,445	4,036	14,481	659	133	15,273
Appalachian	3,367	....	3,367	193	32	3,592
Indiana, Illinois, Kentucky, etc.	10,227	....	10,227	170	239	10,636
Oklahoma, Kansas, Missouri	8,959	....	8,959	370	436	9,765
Texas	17,149	58	17,207	948	743	18,898
Louisiana and Arkansas	4,826	209	5,035	574	158	5,767
Rocky Mountain	1,600	....	1,600	386	124	2,110
California	14,218	....	14,218	727	*889	15,834
United States total	70,791	4,303	75,094	4,027	2,754	81,875
Texas Gulf Coast	12,033	58	12,091	857	457	13,405
Louisiana Gulf Coast	3,141	209	3,350	266	95	3,711

Output—	Gas-oline	Kero-sene	Gas oil and distillate fuels	Residual fuel oils	Total	Lubri-cants	Wax (thousands of pounds)
East Coast	5,911	483	1,238	4,813	6,051	640	18,200
Appalachian	1,588	313	372	472	845	399	6,440
Ind., Ill., Ky., etc.	5,851	326	769	1,219	1,988	145	4,760
Okla., Kans., Mo.	5,322	604	861	1,639	2,500	238	1,960
Texas	8,596	866	1,588	5,293	6,881	471	3,640
Louisiana and Arkansas	2,236	265	434	1,686	2,120	55	4,480
Rocky Mountain	959	52	75	247	322	15	2,520
California	6,253	330	1,831	6,211	8,042	180	.....
United States total	37,016	3,239	7,169	21,580	28,749	2,143	42,000
Texas Gulf Coast	6,137	672	1,354	3,545	4,899	445	3,360
Louisiana Gulf Coast	1,529	215	309	1,070	1,379	39	4,480

Output (continued)—	Coke (tons)	Asphalt (tons)	Other finished products: Road oil	Other finished products: Miscellaneous	Other finished products: Total	Unfinished products	Shortage
East Coast	11,000	175,300	21	34	55	332	716
Appalachian	4,900	14,100	14	33	47	104	178
Indiana, Illinois, Kentucky, etc.	67,400	38,000	321	466	787	804	165
Oklahoma, Kansas, Missouri	39,600	3,000	117	218	335	95	451
Texas	36,700	18,200	10	81	91	357	1,036
Louisiana and Arkansas	5,700	36,400	13	116	129	497	230
Rocky Mountain	13,300	900	115	50	165	441	72
California	1,400	40,900	71	204	275	209	319
United States total	180,000	325,800	682	1,202	1,884	2,829	3,155
Texas Gulf Coast	24,300	18,200	10	57	67	255	694
Louisiana Gulf Coast	5,500	30,400	2	95	97	137	104

*Includes 155,000 bbls. run through pipe lines.

STOCKS HELD BY REFINING COMPANIES, SEPTEMBER, 1931*

(Thousands of barrels of 42 U. S. gallons)

	Gasoline	Kerosene	Gas oil and fuel oil: Gas oil and distillate fuels	Gas oil and fuel oil: Residual fuel oils	Gas oil and fuel oil: Total
East Coast	3,897	1,316	5,388	5,090	10,478
Appalachian	1,394	410	857	701	1,558
Indiana, Illinois, Kentucky, etc.	4,685	564	2,266	2,372	4,638
Oklahoma, Kansas, Missouri	2,919	542	3,033	3,234	6,267
Texas	5,631	1,280	4,197	8,934	13,131
Louisiana and Arkansas	370	481	786	2,692	3,478
Rocky Mountain	1,395	318	341	559	900
California	†12,538	1,647	4,789	(‡)	4,789
Total	33,329	6,558	21,657	23,582	45,239
Texas Gulf Coast	3,547	1,086	3,355	5,437	8,792
Louisiana Gulf Coast	626	459	536	2,011	2,547

	Lubricants	Wax (thousands of pounds): Crude scale	Wax (thousands of pounds): Refined	Wax (thousands of pounds): Total	Coke (tons)
East Coast	3,092	38,326	22,164	60,489	49,200
Appalachian	982	23,329	2,979	26,308	13,800
Indiana, Illinois, Kentucky, etc.	1,041	18,585	1,727	20,312	210,400
Oklahoma, Kansas, Missouri	575	2,795	2,044	4,839	150,000
Texas	2,116	900	13,110	14,010	743,200
Louisiana and Arkansas	124	36,087	1,185	37,272	111,100
Rocky Mountain	242	26,724	1,204	27,928	132,400
California	1,052	.....	.....	.....	105,500
Total	9,224	146,745	44,413	191,158	1,515,600
Texas Gulf Coast	2,036	900	13,003	13,903	632,800
Louisiana Gulf Coast	109	36,087	1,185	37,272	110,800

	Other finished products: Asphalt (tons)	Other finished products: Road oil	Other finished products: Miscellaneous	Other finished products: Total	Unfinished oils: Natural gasoline	Unfinished oils: Other	Unfinished oils: Total
East Coast	123,100	19	72	91	224	8,746	8,970
Appalachian	16,000	22	60	82	4	1,572	1,576
Indiana, Illinois, Kentucky, etc.	93,000	36	210	296	46	6,003	6,049
Oklahoma, Kansas, Missouri	5,000	47	24	71	14	3,106	3,120
Texas	9,100	8	10	18	215	14,352	14,567
Louisiana and Arkansas	47,600	6	12	18	20	2,772	2,792
Rocky Mountain	2,200	62	46	108	....	1,803	1,803
California	43,500	64	263	327	1,951	§7,968	9,919
Total	339,600	314	697	1,011	2,474	46,322	48,796
Texas Gulf Coast	9,100	8	3	11	207	12,925	13,132
Louisiana Gulf Coast	26,900	5	6	11	6	2,036	2,042

*Stocks east of California represent inventories held by refining companies at or near refineries; California stocks represent inventories held by refining companies on the Pacific Coast of the United States at refineries, at or in transit to water terminals and bulk distributing stations. †Includes 322,000 bbls. engine distillate. ‡Included with heavy crude. §Includes 2,385,000 bbls. tops.

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 U. S. gallons)

	Sept., 1931: Total	Sept., 1931: Dy.av.	Aug., 1931: Total	Aug., 1931: Dy.av.	Jan.-Sept., 1931	Jan.-Sept., 1930
Straightrun gasoline	19,120	637	20,307	655	165,806	173,918
Cracked gasoline	15,142	505	15,576	502	130,089	122,941
Natural gasoline:						
Blended at refineries	2,661	86	2,475	80	25,459	30,734
Blended at plants*	13	1	13	1	122	203
Run through pipe lines†	155	5	67	2	823	1,440
Jobbers, exports, etc.	300	10	760	22	3,300	4,110
Benzol produced‡	138	5	145	5	1,519	2,115
Total motor fuel	37,489	1,249	39,283	1,267	327,118	335,461

*East of California. †To refineries in California. ‡Estimated.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 U. S. gallons)

	September, 1931	August, 1931	Jan.-Sept., 1931
Motor fuel turned into lines	2,105	1,827	9,013
Motor fuel delivered from lines	1,926	1,686	7,513
Stocks in lines and working tanks end of month	1,695	1,516	1,695

GASOLINE PRODUCTION BY THE VARIOUS METHODS, SEPTEMBER, 1931
(Thousands of barrels of 42 U. S. gallons)

	Straightrun		Cracked		Natural gasoline		Grand
	Total	%	Total	%	Total	%	total
East Coast	2,512	43	3,266	55	133	2	5,911
Appalachian	901	57	655	41	32	2	1,588
Indiana, Illinois, Kentucky, etc.	2,330	48	2,782	48	239	4	5,851
Oklahoma, Kansas, Missouri	2,859	54	2,027	38	436	8	5,322
Texas	4,435	50	3,718	42	743	8	8,896
Louisiana and Arkansas	1,068	48	1,010	45	158	7	2,236
Rocky Mountain	436	45	399	42	124	13	959
California	4,079	65	1,286	21	889	14	6,253
Total	19,120	52	15,142	41	2,754	7	37,016
Texas Gulf Coast	2,760	45	2,920	48	457	7	6,137
Louisiana Gulf Coast	682	45	752	49	95	6	1,529

UNIFORMITY IN NAMING SOUTHERN TEXAS FIELDS

SAN ANTONIO, Tex., Nov. 16.—Geologists of southwest Texas will undertake to assist in getting uniformity in the naming of oil fields in Southwest Texas. At the last meeting of the San Antonio section of the American Association the matter was brought up and President H. H. Cooper was instructed to appoint a committee. He appointed Joe M. Dawson of the Gulf Production Co. for the Fault zone area, Owen G. Bell of the Humble Oil & Refining Co. in the Laredo territory and Phil Martyn of the Houston Oil Co. in the coast section. The idea is to get an agreement on names so that one field will not be called by several names. Also the Houston society will be conferred with in reaching an agreement as to boundaries of territories to avoid further confusion. The suggestion is that the boundary between the Southwest Texas and Houston territories be the east line of Jackson and Lavaca Counties and north to the Brazos River and south to the Gulf.

LEGAL

Call for Bids to Purchase Royalty Oil Accruing to the United States from the Salt Creek, Wyoming, oil field. Pursuant to the provisions of Section 36 of the act approved February 25, 1920 (41 Stat., 437), sealed proposals, in duplicate, will be received in the office of the Secretary of the Interior, Washington, D. C., on or before noon on December 1, 1931, from responsible bidders for the purchase, for a period beginning January 1, 1932, of all royalty oil accruing to the United States from Government lands in the Salt Creek, Wyoming, oil field. For the calendar year 1930 the total Government royalty oil from Salt Creek field amounted to approximately 1,326,000 barrels, and for the period from January 1 to July 31, 1931, to approximately 666,000 barrels, about 14 per cent of the production of the field, the average gravity in both years being in the range from 36.0 to 36.9 degrees A. P. I. Additional information may be obtained from the Director, Geological Survey, Department of the Interior, Washington, D. C., or the Supervisor, Geological Survey, Casper, Wyoming. Bids are invited on three separate items as follows: Item 1. Royalty oil for the period beginning January 1, 1932, and ending December 31, 1932. Item 2. Royalty oil for the period beginning January 1, 1933, and ending December 31, 1934. Item 3. Royalty oil for the period beginning January 1, 1932, and ending December 31, 1936. Bids must be in the following form: "For the period beginning January 1, 1932, and ending December 31, 193.., (name of bidder), offers ..... cents per barrel above the highest field price for oil of equal or lower gravity in Oklahoma and Kansas, and/or in Wyoming, whichever is the higher, as published or offered by any responsible recognized purchaser for crude oil in quantity not less than 2,000 barrels a day." Delivery of royalty oil will be made in the field without cost to the Government to the successful bidder or for his account. Payments for the royalty oil are to be made to the Register of the United States Land Office, Cheyenne, Wyoming, on or before the fifteenth day of each month following that in which delivery is made. The quantity and quality of the oil will be determined by tank measurement and suitable tests. the measured quantity will be corrected for impurities in excess of one-half of one per cent, and the volume computed in terms of standard barrels at 60° F. Each bidder must submit with his bid a bond in the sum of $1,000 or a certified check payable to the order of the Secretary of the Interior in the sum of $1,000 as a guarantee that he will, if successful, promptly execute a satisfactory contract and furnish a bond in the sum of at least $250,000, conditioned upon full and complete compliance with the terms of the contract. The Secretary of the Interior may accept the offer of the highest bidder and/or bidders and reserves the right to reject all bids whenever within his judgment the interest of the United States demands. Storage facilities are available on Naval Petroleum Reserve No. 3, Wyoming (Teapot), for approximately 1,500,000 barrels of oil. Information in regard thereto may be obtained from the Secretary of the Navy. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., the envelope to be marked plainly "Bid on Salt Creek royalty oil." No bid received after the time herein fixed for submitting bids will be considered. Ray Lyman Wilbur, Secretary of the Interior. October 21, 1931. (P. N. 57694)

OIL MEN FORM COMPANY TO DEAL IN ROYALTIES

Robert M. Briggs, Inc., Tulsa, a holding and management organization recently formed to deal in oil and gas royalties, has attracted unusual interest as a result of its plan of operation and the standing of the men who will serve as officers and directors. The investment committee, which must pass on all contemplated investments before any action is taken, is composed of Robert M. Briggs, chairman; W. C. Franklin and Harry L. Mourer. Mr. Briggs and Mr. Mourer are well known oil men and have established reputations in the field of royalty investments. Mr. Franklin was formerly vice president and general counsel of the Tidal Oil Co. and a director of the American Petroleum Institute. He has served as a director of the Tulsa Chamber of Commerce and as president of the Mid-Continent Oil and Gas Association.

Under its announced plan of operation the company will accept funds from clients throughout the country and use them for the purchase of royalties on a profit-sharing basis. A high degree of diversification is said to be attained under the plan, which includes first the purchase of sufficient proven and producing royalties reasonably to assure clients a return of the principal sum of their investments. The remainder of the fund (less allowances for direct and necessary expenses) is to be used to buy carefully selected prospective royalties on a widely diversified basis.

For its service in organizing successive "Briggsplan" groups, investments of funds and management of such royalty holdings the corporation receives one-eighth of all royalty income until the principal sum of investments has been returned to the members of each group. After that the corporation receives one-fourth of the royalty income and acquires title to a one-fourth interest in the royalty holdings.

Mr. Briggs, president of the company, entered the oil business after the World War, serving in the engineering, scouting, land and production departments of operating companies. Mr. Mourer, chairman of the board, has been in the producing branch of the oil business since 1917, serving in official capacities with producing companies. B. D. Shurtleff, formerly vice president and director of Everhart & Co., underwriters and dealers in securities, is vice president. F. O. Shide, formerly connected with the Mid-Continent Petroleum Corp. and the Tidal Oil Co., is secretary. Mr. Franklin is treasurer.

EAST TEXAS ROYALTY RECORDS

The oil and gas ownership record of the producing and probable producing areas in Gregg and Upshur Counties, Texas, is presented in a book of 232 pages published by the East Texas Royalty Records Co., Tyler, Tex. The volume covers the territory from the Georgetown lime area on the east to the water area on the west and from the south boundary of Gregg County to and including the area beyond production in Upshur County. This territory comprises approximately 100 surveys and some 1,200 separate tracts of land of various sizes within these surveys. The surveys are shown separately and in alphabetical order. The contents of the book are so arranged that it is easy to find the royalty owners in any area, survey or individual tract in a survey. The price of the book is $45.

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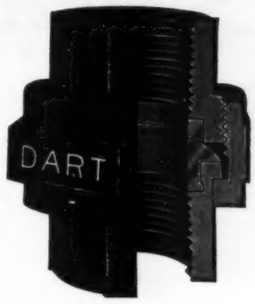

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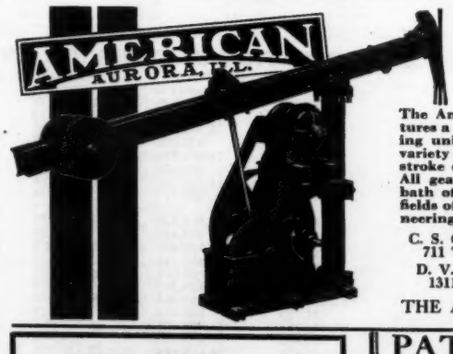

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311 Van Nuys Bldg., *Los Angeles, Calif.*

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for September

RUNS

	Month (bbls.)	Div av. (bbls.)
Prairie P. L. Co.*	528,000	17,600
Gulf P. L. Co.	1,058,467	35,282
Texas P. L. Co.	378,133	12,604
Magnolia P. L. Co.	1,134,918	37,831
Empire P. L. Co.	1,263,766	42,126
Cosden P. L. Co.	564,080	18,803
Stanolind P. L. Co.*	1,245,000	41,500
Oklahoma P. L. Co.	2,074,325	69,144
Other lines*	3,123,000	104,100
Total September	11,369,689	378,990
Total August	13,029,328	419,301
Difference	1,659,639	40,311

SHIPMENTS

Prairie P. L. Co.	3,762,895	125,430
Gulf P. L. Co.	1,746,138	58,204
Texas P. L. Co.	1,079,849	35,995
Magnolia P. L. Co.	920,128	30,671
Empire P. L. Co.	1,857,547	61,918
Cosden P. L. Co.	711,942	23,731
Stanolind P. L. Co.	3,454,590	115,153
Oklahoma P. L. Co.	2,206,570	73,552
Other lines*	4,350,000	145,000
Total September	20,069,659	669,654
Total August	23,270,345	750,656
Difference	3,200,686	81,002

STOCKS

Prairie O. & G. Co.*	35,593,000
Gulf P. L. and Gypsy Oil Co.	7,942,451
The Texas Company	2,784,096
Magnolia Petroleum Co.	6,904,382
Empire P. L. Co.	3,488,478
Mid-Continent Petroleum Corp.	3,348,098
Stanolind Crude Oil Pur. Co.*	15,232,000
Oklahoma P. L. Co.	1,054,256
Carter Oil Co.	6,882,733
Other lines*	15,408,000
Total September	98,657,494
Total August	105,427,880
Difference	6,770,386

*Estimated.

EASTERN PIPE LINE REPORT FOR MONTH OF SEPTEMBER

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for August and September:

	Aug., 1931	Sept., 1931
Nat Trantist	121,756.53	145,864.04
S W Pa. P. L.	64,160.09	79,823.98
Eureka P. L.	274,238.96	306,199.28
Buckeye P. L. (Macksburg)	225,597.43	277,205.53
Buckeye P. L. (Cleveland)	11,149.05	12,190.61
Buckeye P. L. (Lima, etc.)	70,669.93	82,263.82
Indiana P. L.	2,600.03	2,703.99
Cumberland P. L.	146,239.07	145,866.70
N. Y. Transit	26,817.39	30,392.22
Tidewater P. L.	23,568.07	23,802.35
Pure Oil	217,524.86	292,400.07
Stoll Oil Ref.	58,043.70	29,470.48
Bradford Transit	363,931.05	415,169.77
Total	1,596,596.16	1,840,352.84
Daily average	51,503.10	61,345.09

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of the various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug., 1931	Sept., 1931
Nat. Transit	572,837.36	499,112.79
S W Pa P. L.	470,477.88	423,403.26
Eureka P. L.	403,173.50	372,988.75
Buckeye P. L. (Macksburg)	209,652.58	234,573.66
Buckeye P. L. (Cleveland)	2,191.00	1,944.16
Buckeye P. L. (Lima, etc.)	1,965,006.60	1,802,206.78
Indiana P. L.	1,146,141.55	909,359.87
Cumberland P. L.	97,247.87	115,316.63
Southern P. L.	67,327.53	70,722.76
N. Y. Transit	184,459.52	171,412.21
Northern P. L.	194,193.95	255,413.44
Tidewater P. L.	557,863.79	465,676.21
Pure Oil	233,792.38	222,738.09
Bradford Transit	365,531.21	480,695.64
Tuscarora	479,254.08	500,545.93
Total	6,949,150.80	6,526,110.18
Daily average	224,166.16	217,537.01

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of August and September:

	Aug., 1931	Sept., 1931
Nat. Transit	709,462.64	749,274.20
S W Pa. P. L.	437,987.83	404,189.10
Eureka P. L.	1,604,025.48	1,445,855.17
Buckeye P. L. (Macksburg)	304,905.35	347,122.32
Buckeye P. L. (Cleveland)	41,579.11	39,616.26
Buckeye P. L. (Lima, etc.)	2,982,405.14	2,778,403.92
Indiana P. L.	507,328.32	523,814.43
Cumberland P. L.	621,495.00	69,282.55
Southern P. L.	206,524.98	219,384.72
N. Y. Transit	117,899.23	108,612.34
Northern P. L.	247,412.61	208,028.03
Tidewater P. L.	862,114.87	924,216.84
Pure Oil	410,582.85	485,055.55
Tuscarora	12,283.66	11,544.91
Bradford Transit	126,446.26	178,031.09
Total	9,192,457.33	8,492,431.43
Decrease	377,392.45	700,025.90

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of August and September, showing gross stocks of the above fields:

	Aug., 1931	Sept., 1931
Pennsylvania	3,104,338.44	3,054,494.51
Lima	711,235.85	664,893.87
Kentucky	632,038.36	79,690.06
Mid-Continent	3,343,664.94	4,202,724.97
Illinois		15,643.58
Michigan	401,179.74	474,984.44
Total	9,192,457.33	8,492,984.44

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
January	52,904	51,749	75,907	53,939
February	57,002	51,833	79,256	55,163
March	57,485	54,252	76,688	54,331
April	56,812	58,444	84,536	54,914
May	62,067	59,902	70,546	53,344
June	58,230	58,833	75,430	54,110
July	57,144	66,087	68,921	50,723
August	57,745	66,087	54,291	51,503
September	53,487	67,315	56,595	61,346
October	58,100	76,093	58,179	.....
November	53,865	74,831	52,332	.....
December	52,025	74,561	53,999	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
January	146,465	165,721	217,623	175,369
February	167,368	159,387	224,355	183,494
March	158,883	161,474	228,846	189,508
April	172,935	169,737	241,845	191,450
May	180,559	184,281	248,383	199,247
June	188,024	185,404	234,401	221,155
July	189,470	194,763	207,094	211,632
August	192,853	194,946	205,506	224,166
September	194,138	201,214	193,999	217,537
October	176,000	191,367	157,675	.....
November	176,893	202,743	146,638	.....
December	173,572	186,257	143,001	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
January	7,596,564	12,220,045	11,831,092
February	8,738,835	12,991,561	11,506,48
March	9,002,058	13,247,217	11,012,16
April	8,978,172	13,233,961	11,044,48
May	8,903,560	13,052,953	10,728,239
June	8,921,275	13,396,855	9,903,349
July	9,211,565	13,268,562	9,569,849
August	9,440,643	13,047,051	9,192,457
September	9,443,067	12,812,018	8,492,431
October	9,441,101	12,437,555	.....
November	9,868,538	11,851,380	.....
December	11,253,953	11,751,952	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

	Bbls.
Gross stocks, Oct. 1	545,397.77
Runs from wells	469,381.48
Other receipts	72,044.53
Regular deliveries	300,486.29
Other deliveries	233,151.70

The amount of Illinois oil run by the Tidewater Pipe Line Co. in September was 22,802.35 bbls. Deliveries were 22,526.21 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1931—		
September	492,183.83	323,012.50
1930—		
January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.5
April	530,074.22	509,304.6
May	605,147.37	504,069.8
June	572,662.57	468,658.9
July	604,529.54	388,454.4
August	594,642.12	375,742.43
September	457,001.11	371,691.63
October	478,442.13	320,688.73
November	422,794.68	355,403.12
December	556,418.78	363,719.55
1931—		
January	468,429.04	569,573.19
February	429,284.54	461,262.35
March	424,638.23	356,663.26
April	421,814.98	282,532.65
May	433,231.80	322,513.95
June	510,805.78	320,258.12
July	520,009.38	289,219.05
August	476,623.56	393,231.06

Tidewater Pipe Co., Ltd., also delivered in September 124,993.66 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans, Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	6,300	6,400	25,600	12,400	9,567	61,267	.....	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516
November	8,367	6,233	33,800	17,733	4,600	70,733	.....	.....	.....	.....	4,800	75,533
December	5,516	4,323	30,645	9,678	3,580	53,742	.....	.....	.....	.....	4,645	58,387
January	8,387	6,613	21,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,871
February	5,787	2,713	29,143	4,000	5,750	47,393	.....	.....	.....	.....	3,750	51,143
March	10,032	1,611	21,388	7,324	8,774	49,129	.....	.....	.....	.....	6,355	55,484
April	5,133	.....	19,200	16,500	10,067	50,900	.....	.....	.....	.....	4,000	54,900
May	4,452	3,064	19,903	11,226	6,258	44,903	.....	.....	.....	.....	2,355	47,258
June	4,367	.....	25,100	6,333	3,500	39,200	.....	.....	.....	.....	.....	39,200
July	6,774	1,194	24,612	11,065	9,902	53,548	.....	.....	.....	.....	1,335	54,903
August	3,452	.....	16,419	7,419	4,290	31,580	.....	.....	.....	.....	968	32,548

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans, Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	38,867	3,533	150,933	34,500	25,567	253,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548
November	39,633	35,900	124,633	36,467	24,667	261,300	2,467	7,366	.....	1,767	11,600	272,900
December	21,419	14,033	122,774	32,839	33,774	224,839	6,290	10,613	2,097	390	19,290	244,129
January	17,613	13,519	154,225	32,902	30,612	248,871	2,032	11,677	3,097	3,097	19,903	267,774
February	31,321	16,939	127,786	31,714	26,857	234,607	4,536	11,571	.....	536	16,643	251,250
March	27,645	18,935	141,160	26,290	21,129	235,161	4,065	2,580	.....	1,968	8,612	246,774
April	35,000	10,533	105,000	29,767	35,533	215,833	2,733	3,400	.....	.....	6,133	221,966
May	30,129	8,774	107,000	25,452	26,710	198,065	.....	2,000	.....	.....	2,000	200,065
June	30,067	10,333	111,767	27,000	20,333	200,500	3,300	5,500	2,167	1,333	12,300	212,800
July	36,387	11,226	104,678	29,323	21,773	193,387	6,903	7,419	4,194	.....	18,516	211,903
August	33,613	15,581	91,742	22,387	25,741	188,064	4,161	2,516	.....	3,162	9,839	197,903

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
September:	Month	17,934,306	16,509,120	23,111,822	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,237,108
	Daily average	599,477	550,304	770,394	113,517	52,776	66,935	107,967	113,200	2,374,570
October:	Month	18,244,053	16,632,523	23,626,553	3,517,913	1,636,552	2,142,385	3,226,550	3,627,900	72,707,029
	Daily average	588,518	536,533	762,147	113,223	52,792	69,125	104,050	117,000	2,345,384
November:	Month	16,109,459	14,941,770	22,035,322	3,459,330	1,557,870	2,136,948	2,957,100	3,222,000	68,419,699
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,656
December:	Month	17,786,728	15,057,103	21,810,359	3,432,661	1,590,951	2,187,534	3,118,663	3,328,000	68,281,998
	Daily average	573,765	485,713	703,560	110,731	51,321	69,598	100,602	107,355	2,203,645
1931—										
January:	Month	16,485,738	14,850,953	20,019,212	3,422,475	1,574,955	2,135,037	2,966,142	3,274,000	64,838,513
	Daily average	531,798	479,063	645,781	110,725	50,805	68,872	95,682	103,339	2,091,565
February:	Month	14,930,932	13,531,980	18,957,571	3,241,016	1,402,492	1,981,616	2,747,024	3,129,000	60,021,631
	Daily average	533,248	483,285	677,057	119,322	50,089	70,772	98,108	111,750	2,143,630
March:	Month	16,364,842	16,627,687	22,453,619	3,498,598	1,469,245	2,061,576	2,898,035	3,274,000	68,747,602
	Daily average	527,898	536,377	724,310	112,858	47,395	66,502	93,485	105,580	2,217,665
April:	Month	15,803,541	16,815,990	24,887,717	3,281,880	1,412,230	2,008,021	2,901,870	3,273,000	72,384,239
	Daily average	526,785	559,255	896,257	109,396	47,074	66,934	96,729	109,100	2,413,408
May:	Month	16,448,960	17,333,867	23,702,684	3,341,366	1,446,274	2,232,568	3,098,419	3,190,000	76,898,138
	Daily average	530,612	559,157	926,086	107,786	46,654	72,018	99,949	102,900	2,448,294
June:	Month	15,841,436	16,678,200	29,179,823	3,175,440	1,344,450	1,850,511	2,986,200	3,166,000	73,982,513
	Daily average	521,381	555,940	971,327	105,848	44,815	61,684	99,540	105,533	2,466,040
July:	Month	16,093,322	16,467,739	33,827,213	3,090,762	1,387,430	1,715,730	2,995,909	3,341,000	78,739,165
	Daily average	519,139	531,219	1,091,200	99,702	41,530	55,345	93,729	107,774	2,539,650
August:	Month	15,868,984	9,678,510	32,279,816	3,148,887	1,165,445	1,584,444	2,807,143	3,167,000	69,500,229
	Daily average	505,451	312,210	1,041,284	101,577	37,595	51,111	90,553	102,161	2,241,942
Total 12 months		199,562,301	185,125,492	302,857,621	40,179,838	17,471,164	24,014,930	35,851,065	39,587,000	844,649,411
Daily average		546,746	507,193	829,747	110,082	47,866	65,794	98,222	108,458	2,314,108